ORDER NO. VRD0104024C7

Service Manual

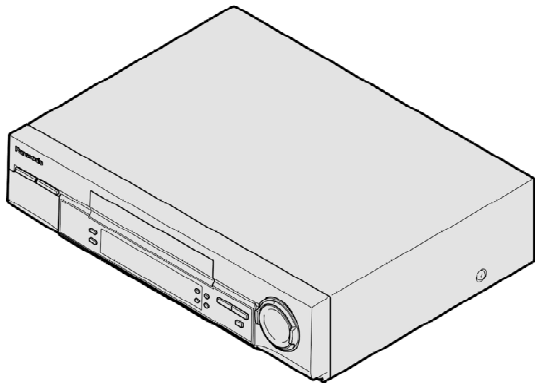
Video Cassette Recorder

Panasonic VHS NTSC

Hi-Fi HQ

NV-FJ710PM

Z-MECHANISM



SPECIFICATIONS

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. INTRODUCTION

This service manual contains technical information which will allow service personnel to understand and service this model.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.
Note:

Adjustment procedures, Disassembly Procedures and Assembly Procedures for Mechanism Chassis are separate volume from this service manual. / Please refer to the service manual for Z-Mechanism Chassis. (Order No. VRD9802005C2)

2. GENERAL DESCRIPTIONS

2.1. SERVICE CAUTION-1

When the Microprocessor IC6001 and/or Back-up battery B6001 are replaced, read following procedure carefully and proceed it.
[REASONS] / There is a RAM in the IC6001, which is backing up:

1. Programme Navigation Data

2. TV Tuning Data

3. PG Shifter Adjustment Data

4. Option Setting Data

When IC6001 and/or B6001 are replaced, all above listed data become not available.
These data is backing up by using the power source of:

***AC Connected**
: AC Power source

***AC Disconnected**
: Back-up Battery (B6001)

2.1.1. REPLACING PROCEDURE [IC6001/B6001]

[1. PREPARATION]

Before replacing IC6001 and/or B6001:

- Take a note that store TV broadcast channels. / (Because, its user may store TV broadcasts by manually other than "Auto Tuning" operation and it is also erased.)
- Back-up the Programme Navigation data. / (The Programme Navigation data is transferable by using "Programme Navigation Data Back-up Tool (VFK1493P)" (You may take make it by referring following schematic diagram.)

-NECESSARY STATUS OF THE VCR UNIT-

1. The IC6001 should be comunicable with the Programme Navi. Back-up Tool. (VFK1493P)

2. The "NAVI" data has to be available in IC6001.

NOTE:

During servicing, do not make short IC6001-pin 37 (5V) with other

line/Components, otherwise, IC6001 may be broken.

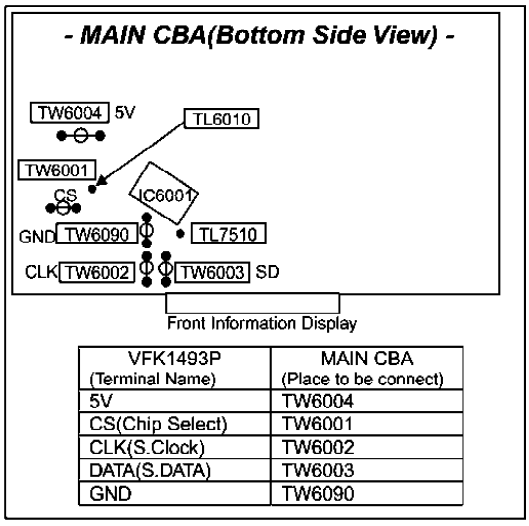
[2. HOW TO CONFIRM THE "NAVI." DATA WITHOUT INSERTING A TAPE INTO VCR?]

1. **Indicate the "NAVI" mark on the Front information Panel. / (Press the Menu button and select the option, then set the "NAVI" to ON mode.)**
2. **Turn on the Service Mode and press the "NAVI" button on the Remote Controller in more than 5 seconds. / The "NAVI" date list is displayed on the Monitor. / (Press the "MENU" button on theRemote Controller for cancellation.)**

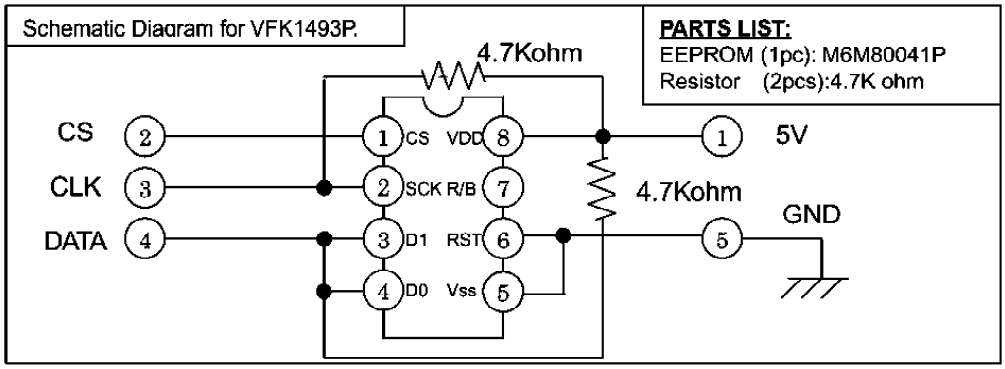
[3. REPLACING PROCEDURE IN STEPS]

[STEP 1. PREPARATION]

1. **Remove the C.B.A. with Mechanism unit by referring the Disassembly procedure.**
2. **Connect the VFK1493P by referring the following figure.**



VFK1493P (Terminal Name)	MAIN CBA (Place to be connect)
5V	TW6004
CS(Chip Select)	TW6001
CLK(S.Clock)	TW6002
DATA(S.DATA)	TW6003
GND	TW6090



[STEP 2. "NAVI" DATA BACK-UP]

	PROCEDURE	F.I.P. DISPLAY
Turn on the Service Mode.		0 00 00
1.	Press FF and EJECT keys / simultaneously for more than / 3 seconds.	
Turn on the Service Mode 2.		2 00 00
2.	Press FF and EJECT keys in twice.	
Turn on the Set-up mode.		2 00
3.	Press the EJECT key for more than 3 seconds.	
Turn on the mode 6.		2 6 00
4.	Press the CH UP key in 3 times.	
Activate the Back-up.		2 6 **
5.	Press the FF key for more than 3 seconds.	
(OK)	"UP" is displayed when the Back-up process has been done successfully.	2 6 up
(NG)	"31" is displayed when the Back-up process has not been done successfully.	2 6 31
	("31" is displayed mainly when the connection failure and ROM failure of VFK1493P occurred. Confirm them and try again.)	

[STEP 3. REPLACE THE IC6001 AND/OR B6001]

1. Disconnect the AC plug and replace the IC6001 and/or B6001. (Do not make a short circuit between IC6001-pin 37 and other pins/ components.)

CAUTION:

***When replacing the B6001, be sure to read/follow the "HOW TO**

REPLACE THE LITHUM BATTERY" section.

[STEP 4. RESET THE IC6001 AT ONCE]

1. **Connect the AC plug.**
2. **Connect a jumper wire between TL7510 and TW6090 (GND) for a second to reset the Microprocessor IC6001.**

Note:

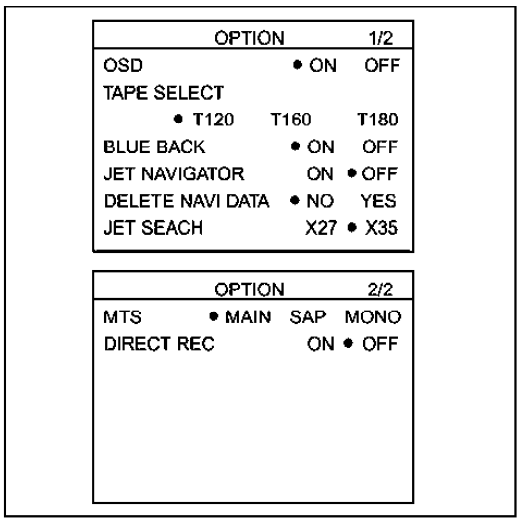
Since the resistance at pin 1 as well as pin 2 of IC6001 decides the model distinction data, no need to set up the Model code, which is necessary in previous model.

[STEP 5. LINE INPUT SETTING]

1. **Connect the 1.5 V battery to TL6010 or Pin 6 of IC6001 until the FIP displays unreadable irregular characters.**
2. **Disconnect the AC plug for few seconds and connect it again.**
3. **Confirm that "A1" and "A2" can be displayed on the FIP by pressing the CH UP and CH DOWN buttons.**

Note:

1. **To set-up the "Plug in Auto Tuner Preset", press the Channel up and down keys simultaneously for 3 seconds.**
2. **Change the OSD setting to the Factory shipping condition if necessary, by referring following charts.**


OPTION 1/2
OSD • ON OFF
TAPE SELECT
• T120 T160 T180
BLUE BACK • ON OFF
JET NAVIGATOR ON • OFF
DELETE NAVI DATA • NO YES
JET SEACH X27 • X35
OPTION 2/2
MTS • MAIN SAP MONO
DIRECT REC ON • OFF

[STEP 6. NAVI. DATA WRITING/SAVING]

1. **Connect the Prog. Navi. Data Back-up Tool (VFK1493P)**

	PROCEDURE	F.I.P. DISPLAY
Turn on the Service Mode.		
1.	Press FF and EJECT keys / simultaneously for more than / 3 seconds.	
Turn on the Service Mode 2.		
2.	Press FF and EJECT keys in twice.	
Turn on the Back-up mode.		
3.	Press the EJECT key in more than 3 seconds.	
Turn on the Back-up mode 6.		
4.	Press the CH UP key for 3 times.	
Activate the NAVI. Data Writing.		
5.	Press the REW key in more than 3 seconds.	
(OK)	"dn" is displayed when the Back-up process has been done successfully.	
(NG)	"32" is displayed when the Back-up process has not been done successfully.	
	("32" is displayed mainly when the connection failure and ROM failure of VFK1493P occured. Confirm them and try again.)	
Reset the Service Mode.		
6.	Press FF and EJECT keys / simultaneously in 6 times.	Normal Indication
NOTE: Perform the PG SHIFTER ADJUSTMENT.		

2.2. HOW TO REPLACE THE LITHIUM BATTERY

2.2.1. GERNERAL DESCRIPTION

There is a RAM in the IC6001, which is backing up the following data by using the power source of B6001 (Back-up Battery).

1. Programme Navigation Data

2. TV Tuning Data

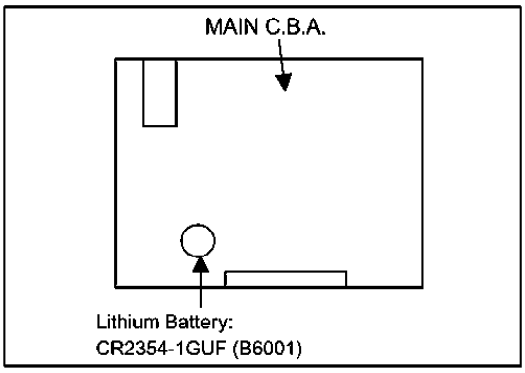
3. PG Shifter Adjustment Data

4. Option Setting Data

2.2.2. REPLACEMENT PROCEDURE

1. **Remove the Top Panel and Mechanism unit with Main C.B.A. by referring the Disassembling Procedure.**
2. **Unsolder the Lithium Battery: B6001 “CR2354-1GUF” and then replace it into new one. (See Fig.B1)**

Fig.B1



NOTE:

The lithium battery is a critical component (Type No.:CR2354-1GUF Manufactured by Panasonic.)
It must nerver be subjected to excessive heat or discharge.
It must therefore only be fitted in equipment designed specifically for its use.
Replacement batteries must be of the same type and manufacture.
They must be fitted in the same manner and location as the original battey, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposeed of in waste products destined for burial rather than incineration.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

2.3. SERVICE CAUTION-2

2.3.1. CAUTION FOR AUTO TUNING

PROCEDURE

Auto Tuning will start by the following procedure.

1. **Connect the DIN-RF Cable.**
2. **Connect the AC Mains Lead.**
3. **Turn on the VCR. / Auto Tuning will start. / Auto Tuning searches for TV stations from VHF minimum to UHF maximum and memorizes every tuned program position. Other program positions are skipped.**
   Auto Tuning takes five or more minutes to complete its search.
   Do not touch the VCR during Auto Tuning.
   Auto Tuning will stop halfway, if the VCR is operated or the aerial lead and/or the mains lead are disconnected.
   In case the VCR stopped during Auto Tuning, the VCR have to be reset and restarted. See the following item 2.

NOTE

1. **If the VCR is turned on with the antenna not connected, all channels are skipped. Therefore, firmly connect the antenna and**

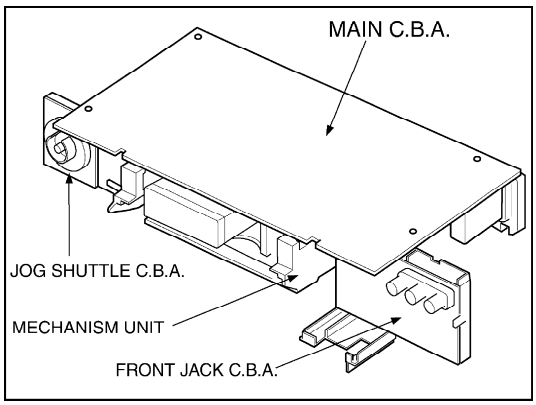
then turn the VCR off and on again to execute Auto tuning.

2. When Auto Tuning is canceled halfway, Auto Tuning is not executed even if the VCR is turned off and then turned on again. / In this case, Auto Tuning have to be restarted by the following procedure.
   A. Press EJECT and remove the Video cassette.
   B. Keep UP and DOWN on the VCR pressed simultaneously for 3 seconds or more during the VCR on. / The channel displayed on the VCR display disappears for a moment then changes to 2.
   C. Turn off the VCR and then turn it on. Auto Tuning commences.
3. If you turn the VCR off during Auto Tuning, Auto Tuning will stop halfway.
   The VCR should be reset and restarted by the item 2 in order to execute Auto Tuning.
4. If the VCR starts playback during Auto Tuning, Auto Tuning will stop halfway.
   The VCR should be reset and restarted by the item 2 in order to execute Auto Tuning.
5. To cancel Auto Tuning Mid-operation, press POWER during Auto Tuning (The VCR is turned off).
6. When the VCR is moved to the other area or country, TV broadcasts should be stored again.

2.3.2. CHECKING OF MAIN C.B.A.

When servicing the MAIN C.B.A., take out the MAIN C.B.A. and mechanism from the frame and turn over.

Fig. S3



2.3.3. REMOVAL OF CASSETTE TAPE

There are 2 ways to remove a cassette tape.

1. Removal of compulsory loading.

A. Press FF and EJECT buttons simultaneously and set the Service Mode 7.

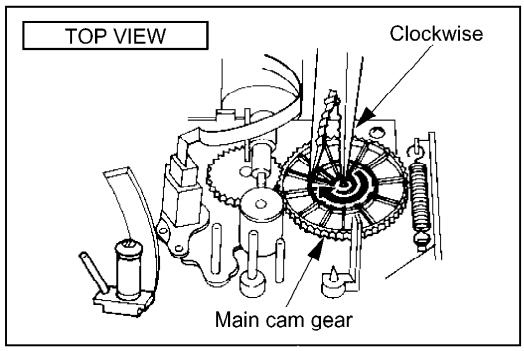
B. Press STOP button in order to unload the mechanism. (Pay an attention of tape slack)
Service Mode Indication:
7 ** ** (STOP) → 7 00 ** (EJECT)

2. Removal of manual operation of Main cam gear.

A. Disconnect the AC power cord and remove Top Panel.

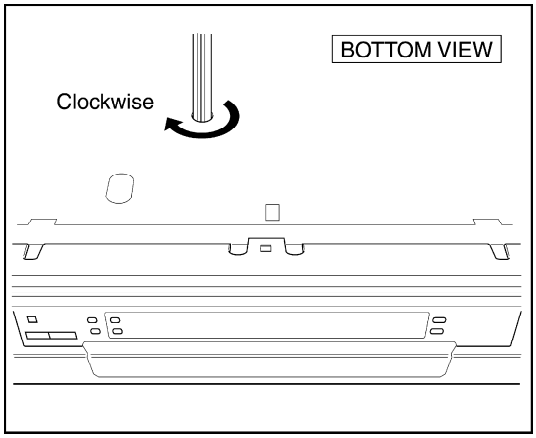
B. Rotate Main Cam Gear to the clockwise and unload the mechanism (Tape is remaining) (Fig. S4).

Fig. S4



C. Rotate the Pole of Capstan motor to the clockwise the from the bottom in order to remove the tape slag.

Fig. S5



D. Rotate Main Cam Gear to the clockwise in order to eject the cassette tape.

2.3.4. CYLINDER UNIT REPLACEMENT

1. CYLINDER UNIT REPLACEMENT

A. Remove the Mechanism unit from MAIN C.B.A./Chassis by referring “Disassembly Procedure”.

B. Remove the 3 screws (A) of the CYLINDER UNIT with a screw driver.

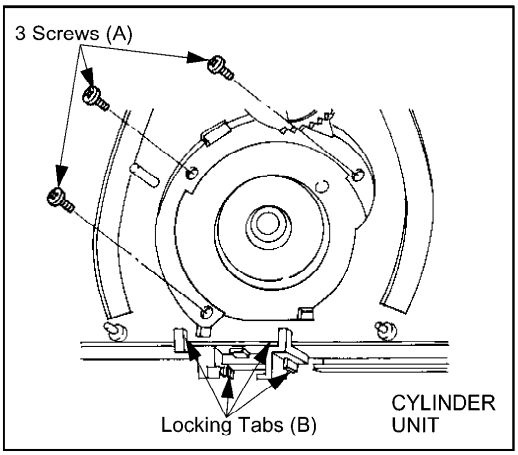
C. Unlock the 4 locking tabs (B) and disconnect the Cylinder flexible card from the FPC Holder.

D. Remove the CYLINDER UNIT.

CAUTION

Handle the Cylinder flexible card with care. When it damaged, you should replace whole Cylinder unit.

Fig. S6



2. UPPER CYLINDER DISASSEMBLY

A. Remove 2 screws (A).

B. Remove the Cylinder Stator Unit.

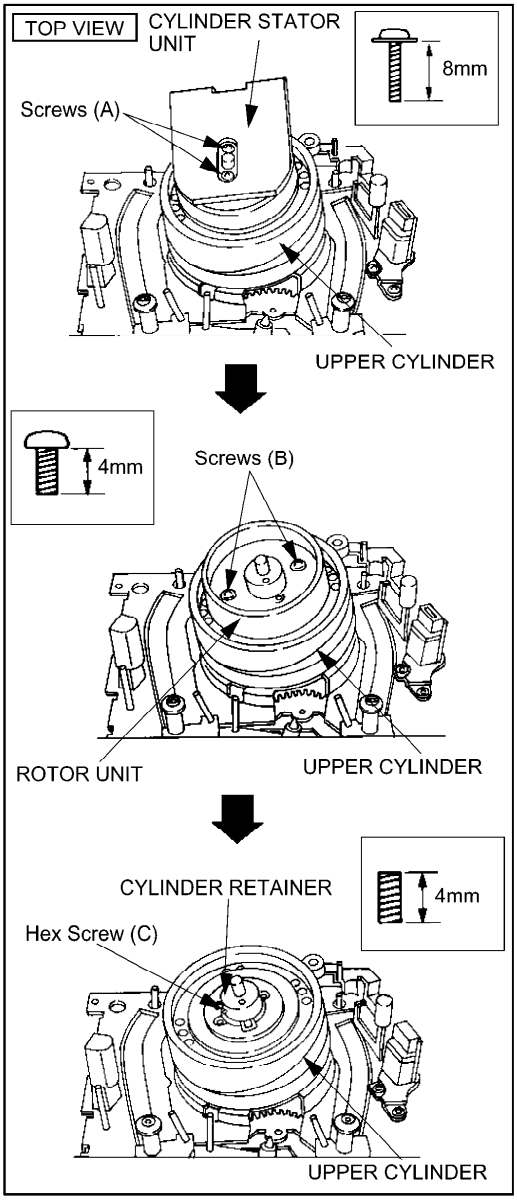
C. Remove 2 screws (B).

D. Remove the Cylinder Rotor Unit.

E. Loose Hex screw (C) (1.5 mm) and remove the CYLINDER RETAINER.

F. Remove the Upper Cylinder.

Fig. S7



3. UPPER CYLINDER ASSEMBLY

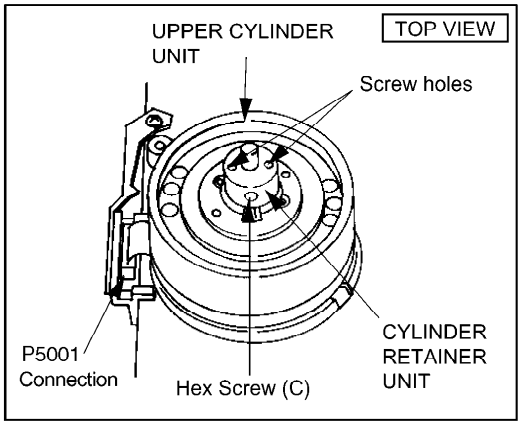
When reassembling, perform the steps in the reverse order.

Notes:

A. Install the Cylinder Retainer so that the 2 holes on top of the Cylinder Retainer are at right angles with the P5001 Connection.

B. Tighten the Hex screw (C) (1.5 mm) while pressing down on top of the Cylinder Retainer.

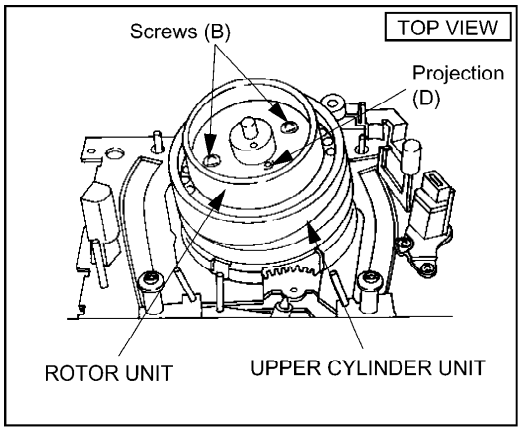
Fig. S8



C. Install the Cylinder Rotor Unit so that the inner hole of the Cylinder Rotor Unit fits to the small projection (D) on top of the Upper Cylinder.

D. Tighten 2 screws (B).

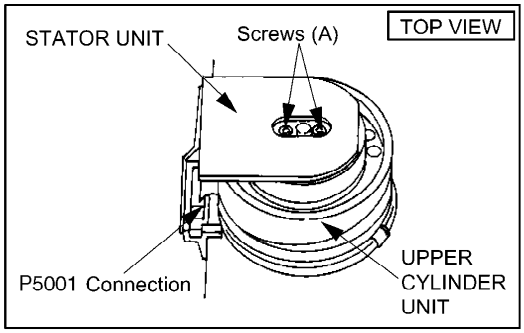
Fig. S9



E. Install the Cylinder Stator Unit.

F. Tighten 2 screws (A).

Fig. S10

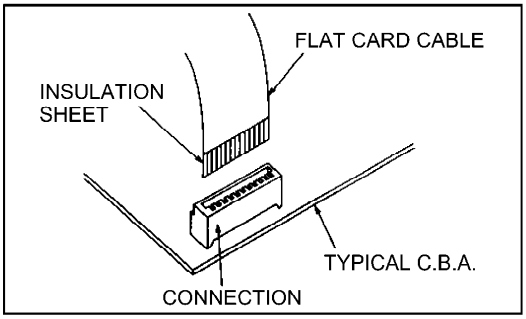


G. Confirm the PG SHIFTER ADJUSTMENT with the alignment tape (NTSC: VFM8080HQFP) and adjust it if necessary.

2.3.5. FLAT CARD CABLE INSTALLATION

When installing the Flat Card Cable on the connector, install the Flat Card Cable with the cable contacts facing the connector contacts.

Fig. S11



2.4. SELF-TEST& SERVICE INFORMATION DISPLAY

Refer to the Service Manual for Z Mechanism Chassis. (Order No.:VRD9802005C2)

2.5. INTRODUCTION OF VIDEO HEAD CLEANING CASSETTE (POLISHING TYPE)

1. **We are pleased to introduce Panasonic Video Head Cleaning Cassette, VFK0923FT [for service purposes] and VFK0923FSE [for end users] for all VHS/SVHS VCP and VCR.**
2. **These cleaning cassettes are exclusive removing the hard and sticky clogging on video heads.**
3. **These improve the efficiency of video head cleaning service and shortening cleaning time for end users.**

	VFK0923FT (For Service usage)	VFK0923FSE (For end users
Type of Cassette	Full VHS Cassette	Full VHS Cassette
Cleaning Time	10 Seconds/Time	10 Seconds/Time
Tape Length	20 m	3.34 m
Usability in a Path	180 Times	30 Times

Note:

The tape material itself is the same in both types.

[VFK0923FT]

[VFK0923FSE]

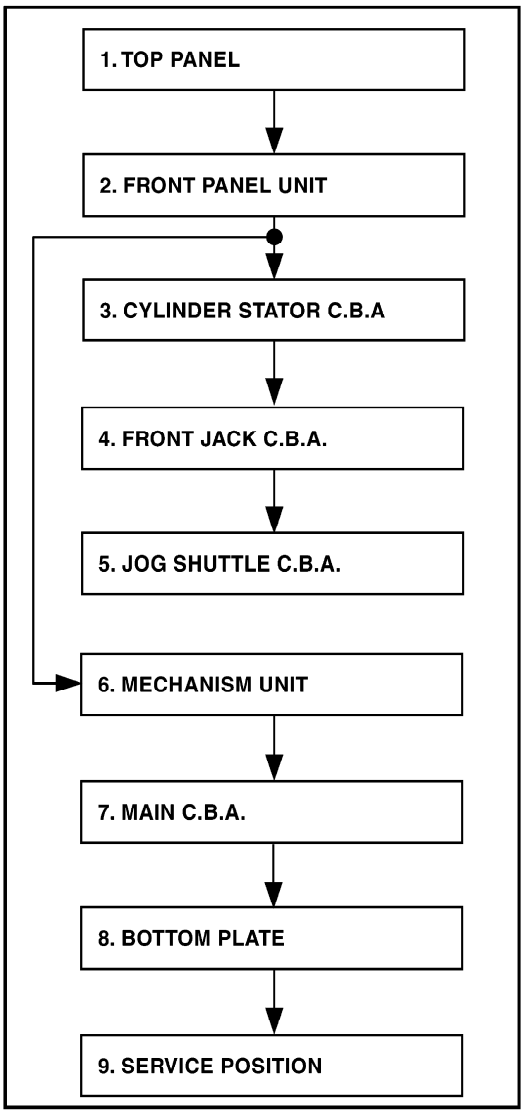
3. ADJUSTMENT PROCEDURES

3.1. DISASSEMBLY METHOD

3.1.1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps of the cabinet parts and the circuit boards in order to find the necessary items for servicing.
When reassembling, perform the steps in the reverse order.

Fig. D1

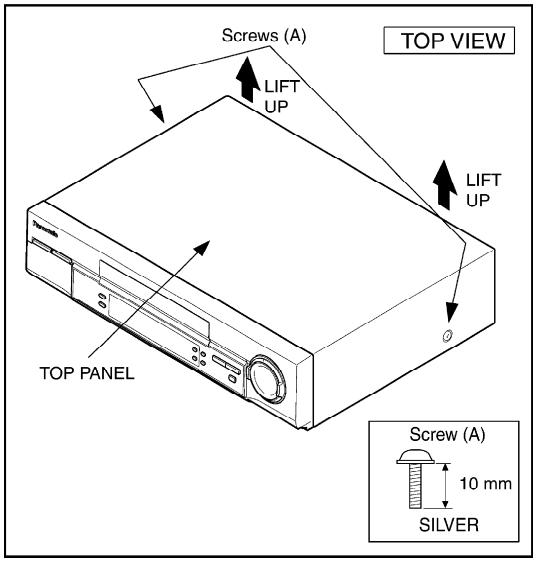


3.1.2. DETAIL OF DISASSEMBLY METHOD

1. REMOVAL OF THE TOP PANEL

Remove	**2 Screws (A)**

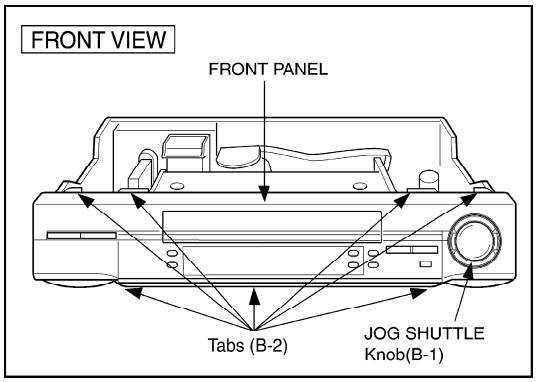
Fig. D2



2. REMOVAL OF THE FRONT PANEL UNIT

Pull out	**JOG and SUTTLE Knob (B-1)**
Unlock	**7 Tabs (B-2)**

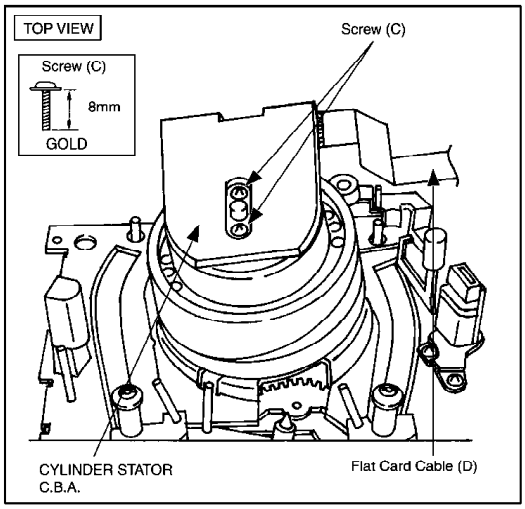
Fig. D3



3. REMOVAL OF THE CYLINDER STATOR C.B.A.

Remove	**2 Screws (C)**
Disconnect	**Flat Card Cable (D)**

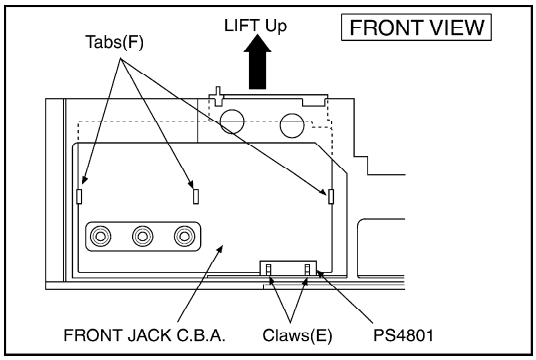
Fig. D4



4. REMOVAL OF THE FRONT JACK C.B.A.

Unlock	**2 Clows (E) Connector PS4801**
Unlock	**3 Tabs (F)**

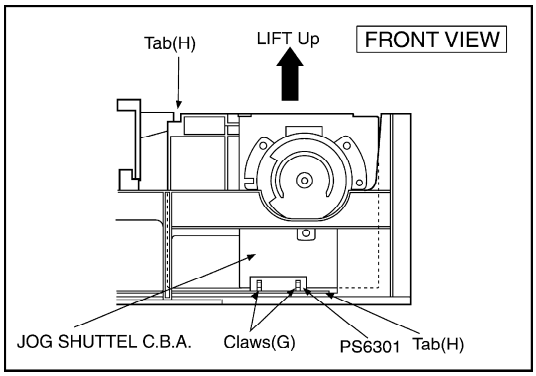
Fig. D5



5. REMOVAL OF THE JOG SHUTTLE C.B.A.

Unlock	**2 Clows (G) Connector PS6301**
Unlock	**2 Tabs (H)**

Fig. D6



6. REMOVAL OF THE MECHANISM UNIT

Remove	**3 Screws (I)**
Remove	**2 Screws (J)**
Remove	**Screw (K)**

NOTE:

Keep pressing 2 stoppers on the Cassette Holder Plate and press the Cassette Holder Plate to the rear. /

[CAUTION -Mounting the Mechanism unit to Main C.B.A.]

A. When assembling, insert the Cylinder Flexible card to the Connector (P5001) carefully, to avoid any damage.

B. Be sure to tighten the Screw (K), otherwise, S/N ration may become worse.

Fig. D7-1

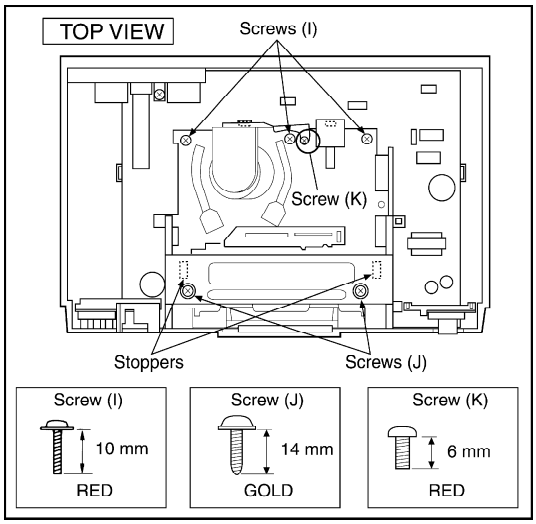
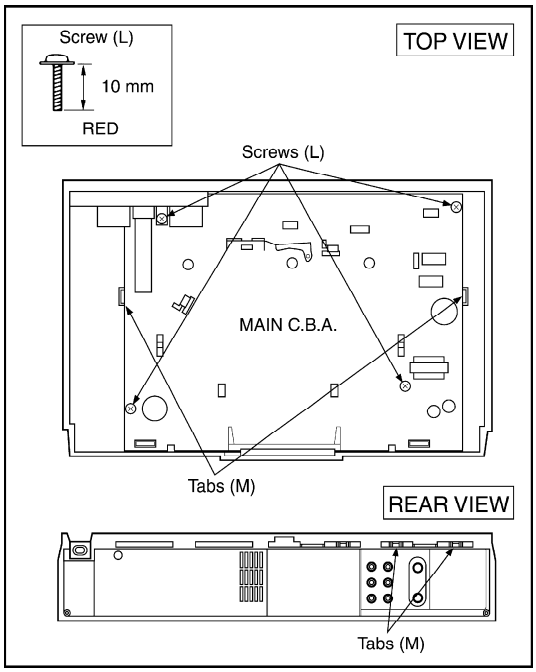


Fig. D7-2

7. REMOVAL OF THE MAIN C.B.A.

Disconnect	**4 Screws (L)**
Unlock	**4 Tabs (M)**

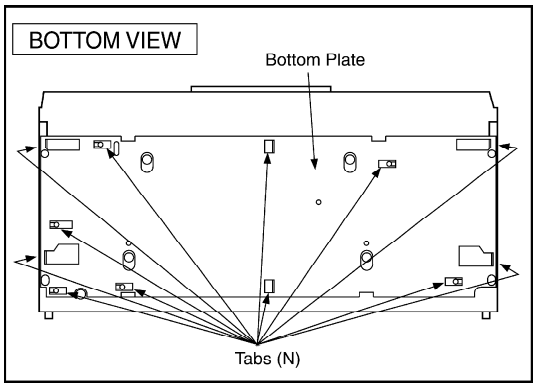
Fig. D8



8. REMOVAL OF THE BOTTOM PLATE

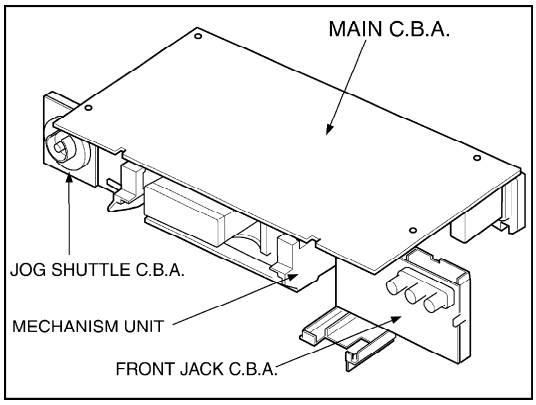
Unlock	**12 Tabs (J)**

Fig. D9



9. SERVICE POSITION

Fig. D10



3.2. MECHANICAL ADJUSTMENT PROCEDURES

Refer to the Service Manual for Z-Mechanism Chassis. / (Order No. VRD9802005C2)

3.3. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete adjustment procedures required for electric circuits of VCR.

3.3.1. TEST EQUIPMENT

To perform electrical adjustments following equipment is required.

1. VHS Alignment Tape. (VFM8080HQFP)

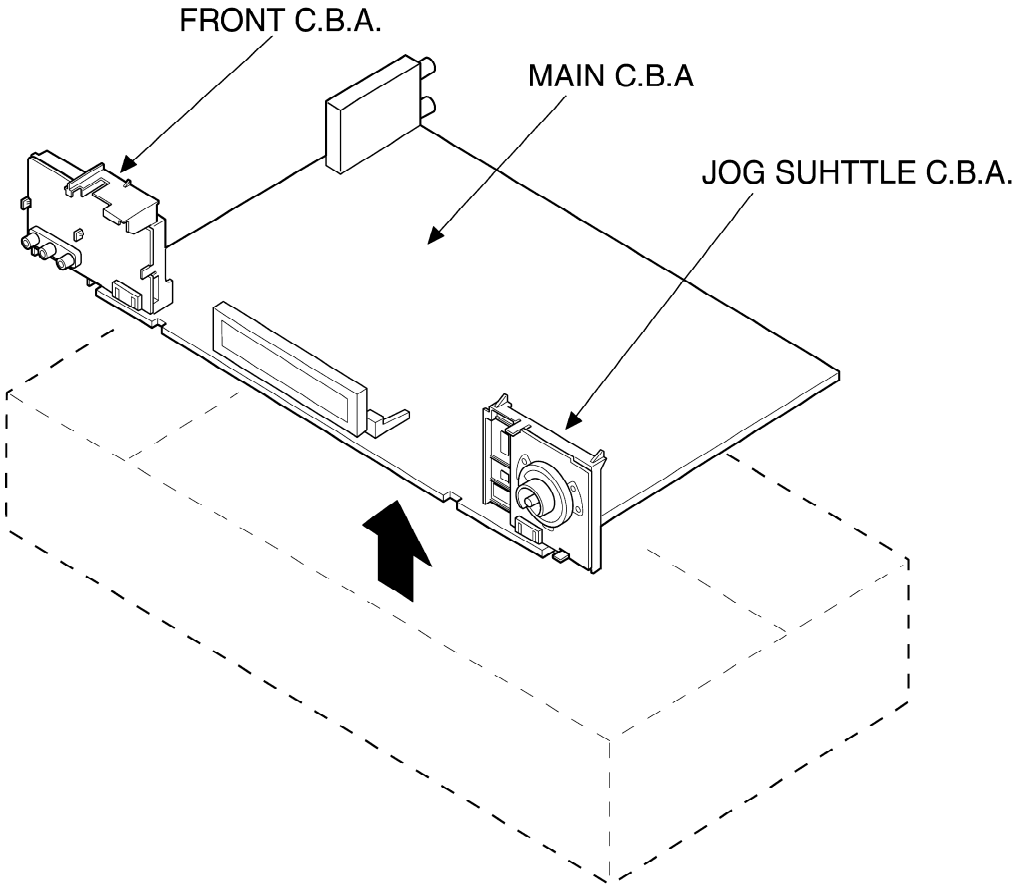
2. Monitor

3.3.2. SERVO SECTION

PG SHIFTER ADJUSTMENT

	PROCEDURES	DISPLAY
1.	To set Service Mode, press the FF and EJECT keys simultaneously for more than 3 seconds.	
2.	To set Service Mode 2, press the FF and EJECT keys simultaneously three times.	
3.	Press the EJECT key for more than three seconds. / Digit of minite is put out light.	
4.	Indicate 1 in the digit of minute by pressing the channel up/down keys. / (When the channel up key is pressed, 1 will be indicate in the digit of minute.)	
5.	Insert the Alignment Tape. (VFM8080HQFP)	
6.	This adjustment is automatically started after VCR goes PLAY mode. / (During the adjustment, the picture will be appeared on the monitor.)	
7.	When this Adjustment is terminated, the following operation will be activated. -Adjustment completed: The tape will be ejected. -Adjustment incompleted: "F2*" is indicated on the FIP.Check the Servo/System Control circuit and Cylinder Unit.	
8.	To release Service Mode 2, press FF and EJECT keys Simultaneously six times.	

3.3.3. CIRCUIT BOARD LAYOUT



4. ABBREVIATIONS

443NT [L]	4.43 NTSC Ⓛ	BIL. [H]	BILINGUAL Ⓗ
A. COMP	AUDIO COMPONENT SIGNAL	BIL/M1[L]	BILINGUAL Ⓛ
A. COMPO	AUDIO COMPONENT SIGNAL	BS CLOCK	BS CLOCK
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ	BS DATA	BS DATA
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ	BS LCH IN	BS L CHANNEL INPUT
A. DEF [S]	AUDIO DEFEAT	BS MIX [H]	BS MIX Ⓗ
A.DEF [S] [L]	AUDIO DEFEAT	BS MON [H]	BS MONITOR Ⓗ
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ	BS MONI [H]	BS MONITOR Ⓗ
A. DUB [H]	AUDIO DUBBING Ⓗ	BS RCH IN	BS R CHANNEL INPUT
A. ERASE	AUDIO ERASE	BS VIDEO	BS VIDEO SIGNAL
A. H. SW	AUDIO HEAD SWITCHING PULSE	BS VIDEO/BS1	BS VIDEO SIGNAL
A. HEAD [R]	AUDIO HEAD (REC)	BS [H]	BS Ⓗ
A. HEAD [W]	AUDIO HEAD (PLAY)	BS. LEVEL	BS LEVEL
A. IN [L]	AUDIO INPUT (L)	BS. M [H]	BS MONITOR Ⓗ
A. IN [R]	AUDIO INPUT (R)	BS/VTR [H]	BS/VTR Ⓗ
A. MUT [H]	AUDIO MUTE Ⓗ	BUS CLK	BUS CLOCK
A. MUTE [H]	AUDIO MUTE Ⓗ	BUS LSN	BUS LISTEN
A. OUT [L]	AUDIO OUTPUT (L)	BUS TLK	BUS TALK
A. OUT [R]	AUDIO OUTPUT (R)	BUZZER	BUZZER
A. RF OUT	AUDIO RF SIGNAL OUTPUT	CAP EC	CAPSTAN TORQUE CONTROL
A/VS/S. DATA	AV SW/SERIAL DATA	CAP M GND	CAPSTAN MOTOR GND
AC ONLINE	AC ONLINE	CAP. ET	CAPSTAN TORQUE CONTROL
AC. O/EE. H	AC ONLINE/EE Ⓗ	CAP. FG1	CAPSTAN FG1 PULSE
AFC S C	AFC S CURVE	CAP. FG2	CAPSTAN FG2 PULSE
AFC [S]	AFC S CURVE	CAS. SW	CASSETTE SW
AFC. DEF	AFC DEFEAT	CCN	PLAYBACK CONTROL SIGNAL (–)
ARFC OUT	AUDIO RF SIGNAL OUTPUT	CCP	PLAYBACK CONTROL SIGNAL (+)
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL	CHM	CONTROL SIGNAL (+)
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI	CHP	CONTROL SIGNAL (–)
		CINEM [L]	CINEMA Ⓛ
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ / NORMAL	CINEMA [L]	CINEMA Ⓛ
		CINEMA/MIX	CINEMA/MIX
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL	CKL	RATCH LOCK
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE	CKS	SHIFT LOCK
AUDIO IN [L]	AUDIO INPUT (L)	CL	CLOCK
AUDIO IN [R]	AUDIO INPUT (R)	CLK	CLOCK
AUDIO OUT [L]	AUDIO OUTPUT (L)	CLK (C.G)	CLOCK
AUDIO OUT [R]	AUDIO OUTPUT (R)	CLOCK. IN	CLOCK INPUT
AUDIO SELECT [H]	AUDIO SELECT Ⓗ	CLP	CLAMP
AUDIO. L	AUDIO (L)	COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
AUDIO. R	AUDIO (R)	COLOR [H]	COLOUR Ⓗ
AV CNT	AV CONTROL	CONV	CONVERTOR
AV CTL	AV CONTROL	CS	CHIP SELECT
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK	CTL GND	CONTROL GND
AV. C.M.	AV CONTROL MODE	CTL HEAD [+]	CONTROL HEAD (+)
AVCNT/METER. R	AV CONTROL/LEVEL METER(R)	CTL HEAD [–]	CONTROL HEAD (–)
AVSW/METER. L	AV SW/LEVEL METER (L)	CTL[+]	CONTROL HEAD (+)
B MODE. H	B MODE Ⓗ	CTL[–]	CONTROL HEAD (–)
B.G.P	BURST GATE PULSE	CUE BIAS	CUE BIAS
BACKUP 5V	BACK UP 5V	CURRENT LIM	CURRENT LIMITER
BAND. U.E.	BAND U	CYL ET	CYLINDER TORQUE CONTROL
BANDVL. D	BAND VL	CYL GND	CYLINDER GND
BI/MI [L]	BILINGUAL/MIX Ⓛ	D.F.M. REC [H]	DELAYED FM RECORDING Ⓗ
BIL	BILINGUAL	D. FM REC [L]	DELAYED FM RECORDING Ⓛ
BIL [L]	BILINGUAL Ⓗ	D. GND	DIGITAL GND

D. REC [H]	DELAYED RECORDING Ⓗ	H.SYNC	HORIZONTAL SYNC
D4/S. LED	D4/STILL LED	H. AMP. SW	HEAD AMP SW PULSE
D4/STILLED	D4/STILL LED	H. P <R>	HEAD PHONE (R)
DAC [CLK]	TUNER DAC (CLOCK)	H. P <L>	HEAD PHONE (L)
DAC/FSCS	TUNER DAC/FS CHIP SELECT	H. P GND	HEAD PHONE GND
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ	H. P OUT [L]	HEAD PHONE OUTPUT (L)
DATA	DATA	H. P OUT [R]	HEAD PHONE OUTPUT (R)
DECODER [L]	DECODER (L)	H. SW	HEAD SW PULSE
DECODER [R]	DECODER (R)	HEAD PHONE [L]	HEAD PHONE (L)
DEW	DEW	HEAD PHONE [R]	HEAD PHONE (R)
DEW SNS	DEW SENSOR	HEAD SW	HEAD SW
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ	HEATER [+]	HEATER (+)
E. REC 5V	EXCEPT RECORDING 5V	HEATER [–]	HEATER (–)
EC	ERROR TORQUE CONTROL	HSS	HORIZONTAL SYNC SIGNAL
ECR	ERROR TORQUE CONTROL	HTR [+]	HEATER (+)
	REFERENCE VOLTAGE	HTR [–]	HEATER (–)
EDT TRIG [L]	EDIT TRIGGER Ⓛ	I RFE	REFERENCE CURRENT
EDIT [H]	EDIT Ⓗ	ICL	CONTROL AGC CIRCUIT
EE [H]	EE Ⓗ	IF	INTERMEDIATE FREQUENCY
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ	IN SELA 1	INPUT SELECT A1 POSITION
EE. VV. TR	EE/VV/TRICK PLAY	IN SELA 2	INPUT SELECT A2 POSITION
EJECT. PO	EJECT POSITION	IN SELA 3	INPUT SELECT A3 POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK	INS L/R [L]	INSERT Lch/Rch Ⓛ
ENV. SEL	ENVELOPE SELECT	INS. [H]	INSERT Ⓗ
ENVE. OUT	ENVELOPE OUTPUT	INSEL A1	INPUT SELECT A1 POSITION
ENVE. SEL	ENVELOPE SELECT	INSEL A2	INPUT SELECT A2 POSITION
ENV SELECT	ENVELOPE SELECT	INSERT	INSERT
EP [H]	LP Ⓗ	INSERT [H]	INSERT Ⓗ
EP/LP [H]	LP Ⓗ	IO CS	INPUT/OUTPUT CHIP SELECT
EP/ LP/SP	LP/SP	JOG1	JOG1
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ	JOG S3 LED/FOWRD	JOG LED/FORWARD LED
EPROMCS	EPROM CHIP SELECT	JOG/F. LED	JOG LED/FORWARD LED
EX. REC 5V	EXCEPT RECORDING 5V	JSB [H]	JSB Ⓗ
FF/REW [L]	FAST FORWARD/REWIND Ⓛ	JST. CLCK	JUST CLOCK
FG1 IN	FG1 PULSE INPUT	JST. CLK	JUST CLOCK
FG2 IN	FG2 PULSE INPUT	JST. CLOCK	JUST CLOCK
FILTER ADJ.	FILTER ADJUSTMENT	L. OUT	Lch OUTPUT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ	L. CH [H]	Lch Ⓗ
FLY ON [H]	FLYING ERASE HEAD ON Ⓗ	L. CH [L]	Lch Ⓛ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ	LED (MAIN)	LED (MAIN)
FM MUT [H]	FM AUDIO MUTE Ⓗ	LED (STEREO)	LED (STEREO)
FM MUTE [H]	FM AUDIO MUTE Ⓗ	LED (SUB)	LED (SUB)
FM OUT [L]	FM OUTPUT (L)	LED CKL	LED SERIAL CLOCK
FM OUT [R]	FM OUTPUT (R)	LED CKS	LED SERIAL CLOCK
FM PACK OUT [L]	FM PACK OUTPUT (L)	LED DATA	LED SERIAL DATA
FM PACK OUT [R]	FM PACK OUTPUT (R)	LINE IN 1 [L]	LINE INPUT 1 (L)
FM/BS SEL [L]	FM/BS SELECT (L)	LINE IN 1 [R]	LINE INPUT 1 (R)
FM/BS SEL [R]	FM/BS SELECT (R)	LINE IN 2 [L]	LINE INPUT 2 (L)
FS. CLK	FS CLOCK	LINE IN 2 [R]	LINE INPUT 2 (R)
FUL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN V	LINE INPUT VIDEO
FULL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN [L]	LINE INPUT (L)
FULL. E. 12V	FULL ERASE 12V	LINE IN [R]	LINE INPUT (R)
GND [A]	GND (ANALOGUE)	LINE OUT [L]	LINE OUTPUT (L)
GND [TU]	GND (TUNER)	LINE OUT [R]	LINE OUTPUT (R)
GND/N. SW. 12V	GND/NON SW 12V	LP [H]	LP Ⓗ

LPTRI [L]	LP TRICK PLAY Ⓛ	P. OFF [L]	POWER OFF Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING	PAL [H]	PAL Ⓗ
M GND	MOTOR GND	PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
M REG	MOTOR REGULATOR	PB ADJ. OUT	PLAYBACK ADJUST OUTPUT
MAIN OUT	MAIN OUTPUT	PB OUT	PLAYBACK OUTPUT
MAIN [L]	MAIN Ⓛ	PB. H	PLAYBACK Ⓗ
MAIN/MONO	MAIN/MONAURAL	PFG	PG/FG
MAX IN	MAXIMUM INPUT	PHOTSN 1B	PHOTO SENSOR 1B
MES [H]	MESECAM Ⓗ	PICT. CNT	PICTURE CONTROL
MESE [H]	MESECAM Ⓗ	PLAY LED/RVS LED	PLAY LED/REVERSE LED
MESE [L]	MESECAM Ⓗ	PLAY. PO	PLAY POSITION
METER 5V	LEVEL METER 5V	PLAY/R.LED	PLAY LED/REVERSE LED
METER [L]	LEVEL METER (L)	PLY/DEW	PLAY/DEW Ⓗ
METER [R]	LEVEL METER (R)	POWER OFF [L]	POWER OFF Ⓛ
METER. L/AVS	LEVEL METER (L)	PREROLL [H]	PREROLL Ⓗ
METER. R/AVC	LEVEL METER (R)	PWRFAIL	POWER FAILURE DETECT
MI/BI [L]	MIX Ⓗ /BILINGUAL	R. CH [H]	Rch Ⓗ
MIC GND	MIC GND	R. CH [L]	Rch Ⓛ
MIC IN	MIC INPUT	R. ST	RESET
MIC IN [L]	MIC INPUT (L)	R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
MIC IN [R]	MIC INPUT (R)	RCH [H]	Rch Ⓗ
MIC [H]	MIC Ⓗ	REC 12V	RECORDING 12V
MIX [H]	MIX Ⓗ	REC CHROMA	RECORDING CHROMINANCE SIGNAL
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC H	RECORDING Ⓗ
MIX/ CINE	MIX Ⓗ/CINEMA SOUND Ⓛ	REC IN	RECORDING INPUT
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC OUT [L]	RECORDING OUTPUT Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ	REC START	RECORDING START
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ	REC VR [C]	RECORDING VOLUME (COMMON)
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ	REC VR [L]	RECORDING VOLUME (L)
MODE SEL	AUDIO MODE SELECT	REC VR [R]	RECORDING VOLUME (R)
MODE SW	AUDIO MODE SW	REC Y	RECORDING LUMINANCE SIGNAL
MODE. S. IN	AUDIO MODE SELECT INPUT	REC [H]	RECORDING Ⓗ
MODE. S. OUT	AUDIO MODE SELECT OUTPUT	REC. C	RECORDING CHROMINANCE SIGNAL
MONO [H]	MONAURAL Ⓗ	REC. Y	RECORDING LUMINANCE SIGNAL
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ	REC/EE CTL	RECORDING/EE CONTROL
MONO2 [L]	MONAURAL 2 Ⓛ	REEL-T	REEL PULSE(TAKE-UP)
MONO2/MESE[FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)	REEL-S	REEL PULSE (SUPPLY)
MOTOR GND	MOTOR GND	REGULATOR FILTER	REGULATOR FILTER
MUTE	MUTE	RESET	RESET
N. A. REC [L]	NORMAL AUDIO RECORDING Ⓛ	REV M F/R	REVIEW MOTOR FORWARD/REVERSE
N. SW 12V	NON SW 12V		
N. SW. 5. DET	NON SW 5V DETECT	REV M V1	REVIEW MOTOR V1
NICAM	NICAM	REV M V2	REVIEW MOTOR V2
NICAM [L]	NICAM Ⓛ	REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ		
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ	REV MOTOR V1	REVIEW MOTOR V1
NORMAL [H]	NORMAL Ⓗ	REV MOTOR V2	REVIEW MOTOR V2
NR BIAS	NR BIAS	REV MOTOR [+]	REVIEW MOTOR (+)
NTSC [L]	NTSC Ⓛ	REV MOTOR [-]	REVIEW MOTOR (-)
OCH	CONTROL AGC CIRCUIT	REV. M. GND	REVIEW MOTOR GND
OUT	OUTPUT	RF.CHROMA	RF CHROMINANCE SIGNAL
P-OFF [H]	POWER OFF Ⓗ	RF OUT	RF OUTPUT
P-OFF [L]	POWER OFF Ⓛ	RF Y	RF LUMINANCE SIGNAL
P. FAIL	POWER FAILURE DETECT	RF. Y. IN	RF LUMINANCE SIGNAL INPUT
P. OFF [H]	POWER OFF Ⓗ	RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT

ROTAR. SW	ROTARY SW	T. BUSCLK	TIMER BUS CLOCK
ROTARY	ROTARY SW	T. BUSLSN	TIMER BUS LISTEN
RST	RESET	T. BUSTLK	TIMER BUS TALK
RST [L]	RESET Ⓛ	T. END [L]	TAPE END Ⓛ
Rch/INST	Rch/INSERT	T. PHOTO	TAKE-UP PHOTO TRANSISTOR
S IN	SERIAL DATA INPUT	TAPE END [L]	TAPE END Ⓛ
S OUT	SERIAL DATA OUTPUT	TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
S-PHOTO	SUPPLY PHOTO TRANSISTOR	TEST	TEST MODE
S-RL. PLS	SUPPLY REEL PULSE	TPZ	TRAPEZOIDAL WAVE CIRCUIT
S. CLK	SERIAL CLOCK	TRIC [L]	TRICK PLAY Ⓛ
S. CLK/AV	SERIAL CLOCK/AV	TRICK [L]	TRICK PLAY Ⓛ
S. DATA	SERIAL DATA	TRK. ENV	AUDIO TRACKING ENVELOPE DETECT
S. DATA/A	SERIAL DATA / AUDIO	TU. AUDIO	TUNER AUDIO
S. PHOTO	SUPPLY PHOTO TRANSISTOR	TU. GND	TUNER GND
S.TAB [L]	SAFETY TAB SW ON Ⓛ	TU. V. IN	TUNER VIDEO SIGNAL INPUT
S/P/N	SECAM/PAL/NTSC	TU. VIDEO	TUNER VIDEO
SC IN	SERIAL CLOCK INPUT	TUN NOR IN	TUNER NORMAL INPUT
SC OUT	SERIAL CLOCK OUTPUT	TUN R	TUNER AUDIO (R)
SCK SELECT	SERIAL CLOCK SELECT	TUN. AUDIO IN	TUNER AUDIO INPUT
SEL OUT [L]	SELECT OUTPUT (L)	TUNER 12V	TUNER 12V
SEL OUT [R]	SELECT OUTPUT (R)	TUNER L	TUNER AUDIO (L)
SHUTTLE 1	SHUTTLE 1	TUNER V IN	TUNER VIDEO SIGNAL INPUT
SIF	SOUND INTERMEDIATE FREQUENCY	TUNER [L]	TUNER AUDIO (L)
SLMUT [H]	INPUT SELECT MUTE Ⓗ	TUNER [N]	TUNER AUDIO (NORMAL)
SLNID [+]	SOLENOID (+)	TUNER [R]	TUNER AUDIO (R)
SLNID [–]	SOLENOID (–)	TUNER. 12	TUNER 12V
SLW TR. MM	SLOW TRACKING MONO MULTI	TUOFF [H]	TUNER OFF Ⓗ
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE	TV. AUDIO	TV AUDIO
		TV/VTR	TV/VTR
SNS. GND	SENSOR GND	TXTON [L]	TEXT ON Ⓛ
SOFT [H]	SOFT TAPE PLAY Ⓗ	U. REG45V	UNREGULATOR 45V
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ	UNREG	UNREGULATOR
SOLENOID ON [L]	SOLENOID ON Ⓛ	UNREG 19V	UNREGULATOR 19V
SP [H]	SP Ⓗ	V. REF	REFERENCE VOLTAGE
SP/L/SLP	SP/LP	V. EE [H]	VIDEO EE Ⓗ
SSS [L]	SLOW/STILL/STOP Ⓛ	V. EE [L]	VIDEO EE Ⓛ
STEREO LED	STEREO LED	VCO REF	REFERENCE OSCILLATOR
STEREO [H]	STEREO Ⓗ	VD. IN	VIDEO SIGNAL INPUT
STEREO [L]	STEREO Ⓛ	VD. OUT	VIDEO SIGNAL OUTPUT
STOP. PO	STOP POSITION	VIDEO EE [L]	VIDEO EE Ⓛ
STOP/5V	STOP POSITION/5V	VIDEO IN	VIDEO SIGNAL INPUT
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT	VIDEO OUT	VIDEO SIGNAL OUTPUT
STOP1/PAL : ST	STOP 1 POSITION/PAL	VM	MOTOR VOLTAGE
STOP2. PO	STOP 2 POSITION	VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
STOP2 / S-TAB	STOP POSITION/SAFETY TAB SW	VSS	VERTICAL SYNC SIGNAL
STREO [H]	STEREO Ⓗ	VTR [H]	VTR Ⓗ
SUB BIAS	SUB BIAS	VTR. 12V	VTR 12V
SUB. SW	SUB SW	X IN	OSCILLATOR INPUT
SVHS CAS [L]	S-VHS CASSETTE Ⓛ	X OUT	OSCILLATOR OUTPUT
SW. 5. DET	SW 5V DETECT		
SYNC [L]	SYNC Ⓛ		
SYSCON 5V	SYSTEM CONTROL 5V		
SYSTEM	SYSTEM SW		
T-PHOTO	TAKE-UP PHOTO TRANSISTOR		
T-RL. PLS	TAKE-UP REEL PULSE		

5. INPUT/OUTPUT CHART

5.1. INPUT/OUTPUT CHART FOR IC6001

No	Terminal Name	I/O	Description	P.OFF	P.Failure	Reset/ Release
1	CODE1	I	AD input terminal for model setting.	In	In	IN
2	CODE2	I	AD input terminal for model setting.	In	In	In
3	T.S.CUREVE	I	Input terminal for "S-Curve" of Tuner AFC.	In	In	In
4	A.SEARCH(L)	I/O	AGC Gain switching signal during the Tuner searching operation. *Gain MAX. (AGC High speed) :"L". *NORMAL :"Hi-Z"	Low	Low	IN
5	SQPB/SE/VHS	I	More than 3.25V :SQPB Less than 3.25V :VHS	In	In	In
6	NORM/SERV/T2/TES	I	Factory mode/Service mode setting terminal.	In	In	In
7	S-PHOT	I	Input terminal of the Tape End sensor detection. *More than 2.6V : Black tape part. *Less than 2.4V :Trans. Tape part.	In	In	In
8	T-PHOT	I	Input terminal of the Tape Beginning sensor detection. *More than 2.6V : Black tape part. *Less than 2.4V :Trans. Tape part.	In	In	In
9	TRACKING_ENVE	I	Input terminal of the Video envelope signal.	In	In	In
10	MO/ST/SAP	I	Input terminal to detect the Current tuned audio condition. INPUT VOLTAGE / AUDIO MODE More than 3.3V / Monaural(MONO.) 1.67V - Less 3.2V / Stereo Less 1.67V / SAP	In	Low	Low
11	CURRENT.LIMIT	O	Control terminal for the Capstan current limit. (Output inpidance: MIN:1K, TYP:2.5K, MAX:4.0K)	In DA=0V	Low	In DA=0V
12	EEPROM_CS	O	Chip Select terminal for the "NAVI" data backup of EEPROM *ACTIVE : LOW	High	Low	High
13	ART.V/H/N	O	Output terminal for the Artificial V-sync. (During REC-Prog.NAVI data writing :Hi-z)	Low	Low	Low
14	REMOCON	I	Input terminal for the Remote Controller.	In	In	In
15	PICT2	O	Contron terminal for the Picture mode.	Low	Low	Low
16	NC	O	Low fix. (No Connection.)	Low	Low	Low
17	PAL_CONV(L)	O	Delay time adjustment for the 1H Comb filter during the NTSC into PAL conversion. *"EE" Mode : "High" * "VV" Mode : Depends on the D6 & D15 of the Video IIC data and the TRICK terminal.	Low	Low	Low
18	VIDEO.H.SW	O	Video head switching signal *L'/R:"High" *R'/L:"Low"	Low	Low	Low
19	AUDIO.H.SW	O	Head switching signal for Audio circuit.	Low	Low	Low
20	D.A.REC(H)	O	Recording control signal for the Linear Audio.	Low	Low	Low
21	PICT1	O	Control terminal for the Picture mode.	Low	Low	Low
22	JOGA	I	JOG Control terminal (JOGA)	In	Low	Low
23	JOGB	I	JOG Control terminal (JOGB)	In	Low	In
24	D.FM.REC	O	Control terminal for FM Audio IC	Low	Low	Low
25	SP(L)	O	REC MODE DATA *N2H/P3H:"Low" *N4H/N6H/P6H/N10H:"High"	Low	Low	Low
26	STAB(L)	I	SAFETY TAB DETECTION *With SAFETY TAB: "Low" *Without SAFETY TAB:"High"	In	In	In
27	SHUTTLE1	I	SHUTTLE Input terminal1	Low	Low	Low
28	SHUTTLE2	I	SHUTTLE Input terminal2	Low	Low	Low
29	SHUTTLE3	I	SHUTTLE Input terminal3	Low	Low	Low
30	SHUTTLE4	I	SHUTTLE Input terminal4	Low	Low	Low
31	POS.SW3	I	Input terminal for the Mechanism position. POSITION / C.EJECT / F.EJECT / REV / MID / PLAY / STOP / FF/REW / Others SW3 / L / H / L / H / L / H / L / H SW2 / L / L / H / H / L / L / H / H SW1 / L / L / L / L / H / H / H / H	In	In	In
32	POS.SW2	I		In	In	In
33	POS.SW1	I		In	In	In
34	RESET	I	RESET Terminal.	In	In	In
35	32KHz.IN	I	Sub clock (32.768KHz) input terminal	In	In	In
36	32KHz.OUT	O	Sub clock (32.768KHz) output terminal	Out	Out	Out
37	5V(D)	-	VCC (5V) for Digital port	-	-	-
38	12MHz.IN	I	Main clock (12/16MHz) input terminal	In	In	In
39	12MHz.OUT	O	Main clock (12/16MHz) output terminal	Out	Out	Out
40	GND(OSC)	-	GND for OSC circuit.	-	-	-
41	CH_H/L	O	RF ch = 3 : Hi-z RF ch = 4 : Low	Low	Low	Low
42	VCR/TV	O	Control signal of TV/VTR output switch. *Shiftting the mode to the P.OFF : "LOW". *Shifting the mode from "EE" into "VV" :"High" *Whenever AC0_36H(ANT_SELECT) has comes, the condition has been reversed.	Low	Low	Low
43	32K.START(L)	I	Clock souce selection terminal during reset start. *12/16MHz(High speed) :Connect to VCC (5V) Control signal of TV/VTR output switch. *32KHz(Slow speed) :Connect to 0V.	In	In	In
44	LC.OSC.IN	I	Input terminal of the LC Oscillation	In	In	In
45	LC.OSC.OUT	O	Output terminal of the LC Oscillation	Out	Out	Out
46	GND	-	Connect to the GND	-	-	-
47	FSC.LPF	I	OSC Filter connection terminal for Internal sync generator.	In	Low	In
48	FSC.IN	I	Sub carrier (fsc) input terminal for sync generator.	In	Low	In
49	GND(OSD)	-	GND terminal for OSD circuit.	-	-	-
50	CVIN	I	Input terminal for composite video signal.	In	In	In

(To be continued to the next page.)

No	Terminal Name	I/O	Description	P.OFF	P.Failure	Reset/ Release
51	ABS_NORMAL	I	This terminal has two purposes. 1.Compulsory Normal Audio selection. 2.Trigger for Audio auto Adjustment. *Compulsory Normal Audio sel.:"Low" level. (ADUBPS/HiFi_Audio envelope being low.) *Other than above : "High" level. (Auto Adjustment trigger input in details: Refer to Audio IIC spec. chart.)	In	In	In
52	CVOUT	O	Output terminal for the composite video signal.	Out	Out	Out
53	5V(OSD)	-	Power supply terminal for OSD	-	-	-
54	HLF	I	LPF connection terminal for slicer.	In	In	In
55	VHOLD	I	Capacitor connection terminal of the Reference voltage generator circuit.	In	In	In
56	CVIN(EDS)	I	Composite video signal input terminal for the slicer.	In	In	In
57	GND	-	Connect to the GND	-	-	-
58	PAL9H(H)	O	"PAL9H" Mode : "High"	Low	Low	Low
59	NC	O	Low fix. (No Connection.)			
60	FM_MUTE	O	Audio mute output terminal. *P.OFF/Head Cleaning/Timer Standby/VPS/PDC Standby: "High". (When lereasing above mode, it will be "Low" after 600m. sec.) *Other than X1 tape speed CUE/REV/SLOW/STILL) in VV mode:"High". (When the tape speed becomes X1, it will be "Low" after 600m.sec.) *EE/VV switching: When the mode change EE/VV, it will be "Low" after 600m.sec.	High	IN	IN
61	A_MUTE	O	Audio mute control terminal for normal audio.	High	IN	IN
62	NC	O	Low fix. (No Connection.)	Low	Low	Low
63	VBI2	O	During NAVI data writing: NAVI data mask pulse exists. Other than above condition:Hi-z	Low	Low	Low
64	VBI1	O	During NAVI data writing: NAVI data writing pulse exists. Other than above condition:Hi-z	Low	Low	Low
65	FLD_CS	O	Chip select signal for FIP driver. *Active: "Low" *Non-active: "High"	(Normal ope.)	Low	High
66	UNLOADING(H)	O	Control terminal for the Unloading operation.	Low	Low	Low
67	LOADING(H)	O	Control terminal for the loading operation.	Low	Low	Low
68	IC.DATA.OUT	O	Timer-Bus signal for IC control:Data output	(Normal ope.)	In	Hi-Z
69	IC.DATA.IN	I	Timer-Bus signal for IC control:Data input	(Normal ope.)	In	In
70	IC.DATA.CLK	O	Timer-Bus signal for IC control:Clock outout	(Normal ope.)	In	Hi-Z
71	IIC.CLK	O	Serial communication terminal (IIC) for AV1 chip/FM audio IC.	(Normal ope.)	In	Hi-Z
72	IIC.DATA	I/O	Serial communication terminal (IIC) for AV1 chip/FM audio IC.	(Normal ope.)	In	Hi-Z
73	125Hz/ROM.CORE	O	ROM Correction confirmation mode. *When the setting bit is "ON", "High" is existed. *When the setting bit is "OFF", "Low" is existed. (Other than ROM Correction confirmation mode, this terminal is the output terminal of internal clock for main clock adjustment..Outputting the 125Hz.)	(Normal ope.)	Low	(Normal ope.)
74	CAP R/F	O	The rotation direction control terminal of the capstan driver. *RVS="High" *FWD="Low".	Low	Low	Low
75	HALF.WAVE.(H)	I/O	Driving method control terminal of the capstan motor: *Half-wave : "High" *Full-wave:"Hi-z"	Hi-Z	Hi-Z	Hi-Z
76	CAP.ET	O	Power supply terminal of the capstan motor control: (Conpared with the driver reference voltage, when it is "low", current will be cut. Also when it is "high", the rotation speed will be acceleted.)	High PWM=0V	Low	High PWM=0V
77	CYL.ET	O	Power supply terminal of the cylinder motor control: (Conpared with the driver reference voltage, when it is "high", current will be cut. Also when it is "low", the rotation speed will be acceleted. (Max:2.8V))	Low PWM=2.800V	Low	Low PWM=2.800V
78	P.FAIL(L)	I	Input terminal for the power failar detection. Power failar : "Low".	In	In	In
79	S.REEL.PULSE	I	Input terminal of the S.Reel pulse.	In	In	In
80	T.REEL.PULSE	I	Input terminal of the T.Reel pulse.	In	In	In
81	NTSC(L)	I/O	PLAYBACK MODE.....50Hz:"High" 60Hz:"Low"	Low	Low	Low
82	NC	O	Low fix. (No Connection.)	Low	Low	Low
83	P.OFF(H)	O	ON/OFF control terminal for the VCR Power. Power OFF : "High"	High	Low	Low
84	AVR(L)	I/O	Refer to the Simple AI playback specification:	Low	Low	Low
85	GND	I	Connect to the GND.	In	In	In
86	FG.AMP.OUT	O	Output terminal for the Capstan FG AMP signal.	Out	Out	Out
87	FG.AMP.IN	I	Input terminal for the Capstan FG AMP signal.	In	In	In
88	GND(A)	-	GND for Analogue circuit.	-	-	-
89	KII FR	I	1.When the SYSTEM-SW is AUTO position in EE mode: * Video "PAL-M/NTSC" destinction result is OK: "LOW" is existed. * Video "PAL-M/NTSC" destinction result is NG: "HIGH" is existed. 2 When the SYSTEM-SW is AUTO position in VV mode: * Video "PAL-M/NTSC" destinction result is OK: "LOW" is existed. * Video "PAL-M/NTSC" destinction result is NG: "HIGH" is existed. NOTE:Reading is performed only a time (20m.sec).	In	In	In
90	CYL.PFC	I	Input terminal for the Cylinder PC/FC.	In	In	In
91	OREF	O	1/2 VDD reference voltage output terminalfor the Analogue AMP.	Out	Out	Out
92	IREF	I	1/2 VDD reference voltage input terminalfor the Analogue AMP.	In	In	In
93	GND	I	GND	In	In	In
94	CTL.HEAD(-)	I/O	I/O terminal for the Control head (-)	In/Out	In/Out	In/Out
95	CTL.HEAD(+)	I/O	I/O terminal for the Control head (+)	In/Out	In/Out	In/Out
96	CTL.AMP.REF	I	Capacitor connection terminal for reference of the control AMP.	In	In	In
97	PB.CTL.OUT	O	Output terminal for the Control AMP.	Out	Out	Out
98	5V(A)	-	Power supply terminal for Analogue AMP.	-	-	-
99	5V(AD)	-	Reference power supply terminal for the AD/8bit DA	-	-	-
100	BIAS(L)	O	The timing termianl for the rinear audio recording. *When recording the linear audio, the "High" is existed syncronising with D.REC(H) signal. Output mode: REC(ADUB/AV-INSERT) *When the recording starts, the BIAS (H) is existed 140-160m.sec later, after D.REC (H) being existed. *When the recording stops, the BIAS (L) is existed in 0-20m.sec later, after D.REC (L) being existed.	IN	IN	IN

6. WAVEFORM TABLE

7. BLOCK DIAGRAMS

7.1. SYSTEM CONTROL& SERVO/ TIMER SECTION BLOCK DIAGRAM

7.2. VIDEO SECTION BLOCK DIAGRAM

7.3. FM AUDIO SECTION BLOCK DIAGRAM

8. SCHEMATIC DIAGRAMS

8.1. POWER SCHEMATIC DIAGRAM

8.2. SYSTEM CONTROL& SERVO/ TIMER SECTION IN MAIN SCHEMATIC DIAGRAM

8.3. VIDEO SECTION IN MAIN SCHEMATIC DIAGRAM

8.4. CYLINDER MOTOR UNIT SCHEMATIC DIAGRAM

8.5. CYLINDER MOTOR UNIT

8.6. AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM

8.7. FRONT JACK SCHEMATIC DIAGRAM

8.8. FRONT JACK C.B.A. (VEP04770A)

8.9. JOG SHUTTLE SCHEMATIC DIAGRAM

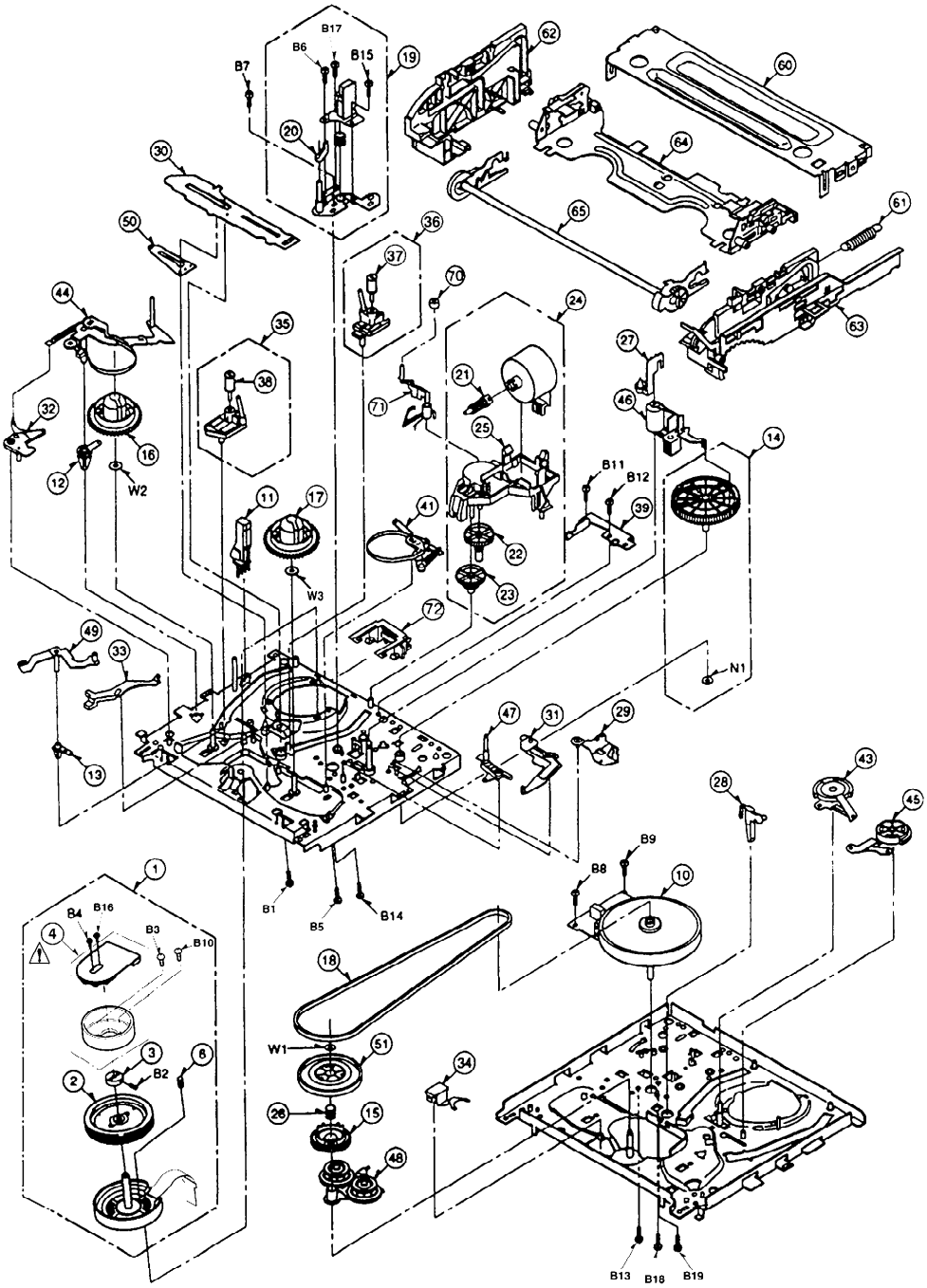
8.10. JOG SHUTTLE C.B.A. (VEP06E11A)

9. CIRCUIT BOARD ASSEMBLIES

9.1. MAIN C.B.A. (VEP06E21D)

10. EXPLODED VIEWS

10.1. CHASSIS PARTS SECTION



10.2. CASING PARTS SECTION

10.3. PACKING PARTS SECTION

11. REPLACEMENT PARTS LIST

11.1. MECHANICAL REPLACEMENT PARTS LIST

Note: 1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety.
When replacing any of these components, use only the same type.

11.1.1. CHASSIS PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks
1	VEG1539	CYLINDER UNIT	[SUPPLIED / FROM MAV]
2	VXP2033	UPPER CYLINDER UNIT	[SUPPLIED / FROM MAV]
3	VDB1256	CYLINDER RETAINER	
4	VEM0715	CYLINDER MOTOR UNIT	⚠
6	VXS0135	EARTH BRUSH UNIT	
10	VEK9069	CAPSTAN UNIT	
11	L1AZ00000004	FE HEAD	
12	VDB1431	TENSION ARM BOSS	
13	VDB1460	SUPPLY BRAKE ARM BOSS	
14	VDG1220KIT	MAIN CAM GEAR	
15	VDG1221	CONVERSION GEAR	
16	VDR0350	REEL TABLE	
17	VDR0350	REEL TABLE	
18	VDV0382	CAPSTAN BELT	
19	VED0412	A/C HEAD UNIT	
20	VMX2656	P4 CAP	
21	VDG1217	WORM GEAR	
22	VDG1218	WORM WHEEL GEAR	
23	VDG1219	CENTRE GEAR	
24	VEM0604	LOADING MOTOR UNIT	
25	VMD2619	MOTOR BRACKET	
26	VMB3045	CONVERSION GEAR SPRING	
27	VMD2620	OPENER PIECE	
28	VMD2738	LED PRISM	
29	VML3165	DRIVE RACK ARM	
30	VML3166	MAIN LEVER	
31	VML3167	DRIVE MAIN LEVER ARM	
32	VML3172	SUPPLY SPRING ARM	
33	VML3176	CONVERSION LEVER A	
34	VML3177	CONVERSION LEVER B	
35	VXA6040	INCLINED BASE (S) UNIT	
36	VXA5854	INCLINED BASE (T) UNIT	
37	VXP1891	ROLLER POST UNIT	
38	VXP1891	ROLLER POST UNIT	
39	VMA9672	SUPPORT ANGLE	
41	VXL2667	TAKE UP BRAKE ARM UNIT	
43	VXL2670	TAKE UP LOADING ARM UNIT	
44	VXL2793	TENSION ARM UNIT	
45	VXL2672	SUPPLY LOADING ARM UNIT	
46	VXL2809	PINCH ARM UNIT	[SUPPLIED / FROM MAV]
47	VXL2996	P5 ARM UNIT	
48	VXL2792	IDLER ARM UNIT	
49	VXL2733	SUPPLY BRAKE ARM UNIT	
50	VXL3271	LOADING RACK UNIT	[SUPPLIED / FROM MAV]

Ref. No.	Part No.	Part Name & Description	Remarks
51	VXP2035	CENTRE CLUTCH UNIT	
60	VMA9516	TOP PLATE	
61	VMB3047	CONNECTION SPRING	
62	VMD3379	SIDE PLATE (L)	
63	VXA6540	SIDE PLATE (R) UNIT	
64	VXA5746	CASSETTE HOLDER UNIT	
65	VXP1730	MAIN SHAFT UNIT	
70	VDP1668-K	CLEANER ROLLER	
71	VML3164	CLEANER ARM	
72	VMD3795	FPC HOLDER	
B1	VHD1117	SCREW	
B2	VHD0842	SCREW	
B3	VHD0843	SCREW	
B4	VHD0844	SCREW	
B5	VHD1117	SCREW	
B6	VHD1066	SCREW	
B7	VHD1044	SCREW	
B8	VHD1060	SCREW	
B9	VHD1071	SCREW	
B10	VHD0843	SCREW	
B11	XTS26+6F	SCREW	
B12	XTN26+6F	SCREW	
B13	XTN26+7J	SCREW	
B14	VHD1095	SCREW	
B15	VHD1185	SCREW	
B16	VHD0844	SCREW	
B17	VHD1066	SCREW	
B18	XTN26+7J	SCREW	
B19	XTN26+7J	SCREW	
N1	VHN0311	PUSH NUT	
W1	VMX2208	WASHER	
W2	VMX3022	WASHER	
W3	VMX3022	WASHER	

11.1.2. CASING PARTS SECTION

Ref. No.	Part No.	Part Name & Description	Remarks
101	VGM1695	TOP PANEL	
102	VYP8122	FRONT PANEL UNIT	[SUPPLIED / FROM MAV]
103	VKA0192	LEG	
104	VKF3332	FRONT JACK DOOR	[SUPPLIED / FROM MAV]
105	VKF3346	BLINDER PANEL	[SUPPLIED / FROM MAV]
106	VMB2521	BLINDER SPRING	
107	VJA1000	AC CORD	⚠ / [SUPPLIED / FROM MAV]
108	VKA0192	LEG	
109	VJH1142	ANT BOARD	
110	VWJ06D2150MM	FLAT CARD CABLE (6P)	[SUPPLIED / FROM MAV] / AC HEAD - / MAIN (P4001)
111	VWJ09D2200MM	FLAT CARD CABLE (9P)	[SUPPLIED / FROM MAV] / UDD - MAIN / (P2501)
112	VKU0573	BOTTOM PLATE	[SUPPLIED / FROM MAV]
113	RKA0072	FOOT	
114	VJF0139	AC CORD CLAMP	
115	RKA0072	FOOT	
116	VGB0554	SUPER DRIVE BADGE	[SUPPLIED / FROM MAV]
117	VGQ6104	FRONT PCB HOLDER (L)	[SUPPLIED / FROM MAV] / (FOR FRONT / JACK)
118	VGQ6105	FRONT PCB HOLDER (R)	[SUPPLIED / FROM MAV] / (FOR JOG / SHUTTLE)
119	VGU8824	JOG DIAL	[SUPPLIED / FROM MAV]
120	VXU1602	JOG SHUTTLE UNIT	[SUPPLIED / FROM MAV]
B101	XTW3+10TFC	SCREW	
B102	VHD0168	SCREW	
B103	XTW3+10PR	SCREW	
B104	XTV26+6JFR	SCREW	
B105	XTV26+8FR	SCREW	
B106	XTW3+10TFC	SCREW	
B107	VHD0168	SCREW	
B108	XTW3+10PR	SCREW	
B109	XTW3+10PR	SCREW	
B110	XTW3+10PR	SCREW	
B111	XTW3+10PR	SCREW	
B112	XTW3+10PR	SCREW	
B113	XTW3+10PR	SCREW	
B114	XTV26+8FR	SCREW	
B115	XTV26+8FR	SCREW	

11.1.3. PACKING PARTS SECTION

Ref. No.	Part No.	Part Name & Description	Remarks
201	VQT9138	OPERATING INSTRUCTIONS / (SPANISH)	⚠ / [SUPPLIED / FROM MAV]
202	N2QAKB000008	REMOTE CONTROLLER	[SUPPLIED / FROM MAV]
203	VJA1125	RF CABLE	
205	VJS3797	AC PLUG ADAPTER	⚠ / [SUPPLIED / FROM MAV]
206	R0186-720010	BATTERY COVER	[SUPPLIED / FROM MAV]
211	VPN5359	CUSHION (L)	
212	VPN5360	CUSHION (R)	
215	VPG0J03	PACKING CASE	[SUPPLIED / FROM MAV]
		SERVICE FIXTURES & TOOLS	
	VFM8080HQFP	VHS ALIGNMENT TAPE (NTSC)	
	VFK0335	RETAINING RING REMOVER / (3mm/4mm)	
	VFK0329	POST ADJUSTMENT SCREW / DRIVER	
	VFK0326	HEX WRENCH SET	
	VFK0132	BACK TENSION METER	
	VFK27	HEAD CLEANING STICK	
	VFK1024	MOLYTONE GREASE	
	VFK0330	FINE ADJUSTMENT GEAR / DRIVER	
	VFK1301	SILICONE GREASE	
	VFK1298	FOIL GREASE	

11.2. ELECTRICAL REPLACEMENT PARTS LIST

Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE : Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified.
All resistors are in OHMS , K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf) , P=uuF.
4. The P.C.Board units marked width"▮"show below the main assembled parts.
5. The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

Ref. No.	Part No.	Part Name & Description	Remarks
■	VEP06E21D	MAIN C.B.A.	(RTL) / [SUPPLIED / FROM MAV]
■	VEP04770A	FRONT C.B.A.	(RTL) / [SUPPLIED / FROM MAV]
■	VEP06E11A	JOG SHUTTLE C.B.A.	(RTL) / [SUPPLIED / FROM MAV]
■	----------	CYLINDER STATOR C.B.A.	INCLUDED IN / CYLINDER / UNIT / (VEG1539).
■	----------	CAPSTAN DRIVE C.B.A.	INCLUDED IN / CAPSTAN UNIT / (VEK9069).
■	VEP06E21D	MAIN C.B.A.	(RTL) / [SUPPLIED / FROM MAV]
B6001	VSB0205	LITHIUM BATTERY	

Ref. No.	Part No.	Part Name & Description	Remarks
C1120	ECQU2A333MVA	P.CAPACITOR 250V 0.033U	⚠
C1121	VCK0286B331	CERAMIC CAPACITOR	⚠
C1123	VCK0286E102	CERAMIC CAPACITOR	⚠ / F1BAF1020011
C1140	ECEC2GG680FZ	E.CAPACITOR 400V 68U	
C1151	ECQB1H473JM	P.CAPACITOR 50V 0.047U	
C1152	ECQB1H103JZ	P.CAPACITOR 50V 0.01U	
C1153	ECQB1H104JM	P.CAPACITOR 50V 0.1U	
C1154	ECQB1H223JM	P.CAPACITOR 50V 0.022U	[SUPPLIED / FROM MAV]
C1155	F1A3A271A028	E.CAPACITOR 1KV 270U	[SUPPLIED / FROM MAV] / F1A3A271A034
C1200	ECQB1H104JM	P.CAPACITOR 50V 0.1U	
C1210	F1B3A332A004	E.CAPACITOR 1KV 3300U	[SUPPLIED / FROM MAV]
C1230	F2A1H560A101	E.CAPACITOR 50V 56U	[SUPPLIED / FROM MAV]
C1250	VCEA1CJH681E	E.CAPACITOR 16V 680U	[SUPPLIED / FROM MAV] / F2A1C6810002
C1251	ECA1CM101	E.CAPACITOR 16V 100U	
C1260	VCEA1AJH122E	E.CAPACITOR 10V 1200U	[SUPPLIED / FROM MAV]
C1261	ECA1AM221	E.CAPACITOR 10V 220U	
C1270	F2A1H560A101	E.CAPACITOR 50V 56U	[SUPPLIED / FROM MAV]
C1280	F2A1A101A089	E.CAPACITOR 10V 100U	[SUPPLIED / FROM MAV]
C1301	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C1303	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C1304	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C1341	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C1342	ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	
C1352	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C2001	ECUX1H330JCV	C.CAPACITOR CH 50V 33P	
C2002	ECEA1CKA470	E.CAPACITOR 16V 47U	
C2003	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C2004	ECUX1A474KBV	C.CAPACITOR CH 10V 0.47U	[SUPPLIED / FROM MAV]
C2006	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C2012	ECUX1H681JCV	C.CAPACITOR CH 50V 680P	
C2013	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C2014	ECUM1C563KBV	C.CAPACITOR CH 16V 0.056U	
C2015	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C2051	ECEA0JKS220	E.CAPACITOR 6.3V 22U	
C2053	ECEA1CKS100	E.CAPACITOR 16V 10U	
C2054	ECUX1H153KBV	C.CAPACITOR CH 50V 0.015U	
C2501	ECEA1VKN4R7B	E.CAPACITOR 35V 4.7U	[SUPPLIED / FROM MAV]
C2502	ECEA1VKN4R7B	E.CAPACITOR 35V 4.7U	[SUPPLIED / FROM MAV]
C2503	ECEA1VKN4R7B	E.CAPACITOR 35V 4.7U	[SUPPLIED / FROM MAV]
C2504	ECUM1C683KBV	C.CAPACITOR CH 16V 0.068U	
C2505	ECUX1A154KBV	C.CAPACITOR CH 10V 0.15U	
C2506	ECUX1A154KBV	C.CAPACITOR CH 10V 0.15U	
C2507	ECUX1A154KBV	C.CAPACITOR CH 10V 0.15U	
C2508	ECUV1H473ZFV	C.CAPACITOR CH 50V 0.047U	
C2509	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C2510	ECEA1AKS221	E.CAPACITOR 10V 220U	
C2551	ECUM1C563KBV	C.CAPACITOR CH 16V 0.056U	
C2552	ECUM1C563KBV	C.CAPACITOR CH 16V 0.056U	
C3001	ECEA1CKS100	E.CAPACITOR 16V 10U	
C3002	ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	
C3003	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	

Ref. No.	Part No.	Part Name & Description	Remarks
C3004	ECUX1H151JCV	C.CAPACITOR CH 50V 150P	
C3006	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3007	ECUX1H180JCV	C.CAPACITOR CH 50V 18P	
C3008	ECA0JM471	E.CAPACITOR 6.3V 470U	
C3009	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3010	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3011	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3012	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3013	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3014	ECEA1EKS3R3	E.CAPACITOR 25V 3.3U	
C3015	ECEA1CKS100	E.CAPACITOR 16V 10U	
C3016	ECEA1HKS010	E.CAPACITOR 50V 1U	
C3017	ECEA1HKS2R2	E.CAPACITOR 50V 2.2U	
C3018	ECEA1HKS010	E.CAPACITOR 50V 1U	
C3019	ECEA1HKS010	E.CAPACITOR 50V 1U	
C3021	ECUX1H561JCV	C.CAPACITOR CH 50V 560P	
C3022	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C3025	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3026	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3027	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	
C3028	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3029	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3033	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
C3035	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
C3036	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3037	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	
C3038	ECEA1HKAR47B	E.CAPACITOR 50V 0.47U	
C3039	ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	
C3040	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	
C3042	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3043	ECEA1EKS3R3	E.CAPACITOR 25V 3.3U	
C3045	ECUX1H030CCV	C.CAPACITOR CH 50V 3P	
C3046	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3049	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	
C3050	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C3051	ECUX1H220JCV	C.CAPACITOR CH 50V 22P	
C3054	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C3063	ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	
C3064	ECUX1H560JCV	C.CAPACITOR CH 50V 56P	
C3301	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C3303	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C3304	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C3305	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	
C3307	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	
C3405	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C4009	ECQB1H223JF	P.CAPACITOR 50V 0.022U	
C4010	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C4012	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C4037	ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	
C4038	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	
C4039	ECEA1AKS221	E.CAPACITOR 10V 220U	
C4040	ECUX1H471KBV	C.CAPACITOR CH 50V 470P	
C4041	ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	
C4042	ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	

Ref. No.	Part No.	Part Name & Description	Remarks
C4043	ECEA0JKS220	E.CAPACITOR 6.3V 22U	
C4061	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C4062	ECEA0JKA330	E.CAPACITOR 6.3V 33U	
C4063	ECUX1H182KBV	C.CAPACITOR CH 50V 1800P	
C4064	ECEA1EKS3R3	E.CAPACITOR 25V 3.3U	
C4065	ECUX1H182KBV	C.CAPACITOR CH 50V 1800P	
C4502	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4503	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4504	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4505	ECEA0JKA330	E.CAPACITOR 6.3V 33U	
C4506	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4507	ECEA0JKS220	E.CAPACITOR 6.3V 22U	
C4508	ECUX1C333KBV	C.CAPACITOR CH 16V 0.033U	
C4509	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C4510	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C4511	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C4512	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	
C4513	ECEA0JKS220	E.CAPACITOR 6.3V 22U	
C4514	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4515	ECEA0JKA330	E.CAPACITOR 6.3V 33U	
C4516	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4517	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C4519	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4520	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4521	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4522	ECEA0JKS220	E.CAPACITOR 6.3V 22U	
C4524	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C4525	ECEA1CKA470	E.CAPACITOR 16V 47U	
C4530	ECUX1H151JCV	C.CAPACITOR CH 50V 150P	
C4531	ECUX1H151JCV	C.CAPACITOR CH 50V 150P	
C4534	ECQB1H153JM	P.CAPACITOR 50V 0.015U	
C4535	ECQB1H153JM	P.CAPACITOR 50V 0.015U	
C4536	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C4537	ECUV1H560GCN	C.CAPACITOR CH 50V 56U	
C4538	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C4561	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4562	ECEA1HKS010	E.CAPACITOR 50V 1U	
C4563	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C4565	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C4567	ECEA1HKS3R3	E.CAPACITOR 50V 3.3U	
C4568	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C4569	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C4570	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C4571	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C4572	ECEA1HKS2R2	E.CAPACITOR 50V 2.2U	
C4573	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	
C4574	ECEA1HKS3R3	E.CAPACITOR 50V 3.3U	
C4601	ECEA1CKS100	E.CAPACITOR 16V 10U	
C4603	ECUX1H681JCV	C.CAPACITOR CH 50V 680P	
C5001	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5002	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5003	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5004	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5005	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	

Ref. No.	Part No.	Part Name & Description	Remarks
C5006	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5007	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5008	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C5009	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C5010	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C5051	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C6001	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	
C6002	ECUX1H220JCV	C.CAPACITOR CH 50V 22P	
C6003	ECUX1H220JCV	C.CAPACITOR CH 50V 22P	
C6004	ECUX1H180JCV	C.CAPACITOR CH 50V 18P	
C6005	ECEA1EKS3R3	E.CAPACITOR 25V 3.3U	
C6006	ECUX1H221JCV	C.CAPACITOR CH 50V 220P	
C6007	ECUX1H221JCV	C.CAPACITOR CH 50V 220P	
C6008	ECA0JM331	E.CAPACITOR 6.3V 330U	
C6009	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C6010	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C6011	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C6012	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C6013	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C6014	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C6015	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C6016	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	
C6017	ECUX1H470JCV	C.CAPACITOR CH 50V 47P	
C6018	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C6019	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C6020	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C6021	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C6022	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C6023	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C7501	ECUX1H120JCV	C.CAPACITOR CH 50V 12P	
C7502	ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	
C7503	ECUV1H104ZFN	C.CAPACITOR CH 50V 0.1U	
C7504	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C7505	ECEA1VKA100B	E.CAPACITOR 35V 10U	
C7601	ECEA1HKS010	E.CAPACITOR 50V 1U	
C7602	ECUX1C224ZFV	C.CAPACITOR CH 16V 0.22U	
C7605	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C7608	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C7614	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C7616	ECEA0JKS470	E.CAPACITOR 6.3V 47U	
C7701	ECUX1C333KBV	C.CAPACITOR CH 16V 0.033U	
C7703	ECEA0JKS101	E.CAPACITOR 6.3V 100U	
C7704	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C7705	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	
C7706	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	
C7707	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C7708	ECUX1H471JCV	C.CAPACITOR CH 50V 470P	
C7709	ECUX1H182KBV	C.CAPACITOR CH 50V 1800P	
C7710	ECUX1A105ZFV	C.CAPACITOR CH 10V 1U	
C7711	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C7712	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	
C7713	ECUX1H820JCV	C.CAPACITOR CH 50V 82P	
D1110	ERZVA5Z471	TRANSIENT/SURGE ABSORBER	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
D1140	DF08S-6622	DIODE	[SUPPLIED / FROM MAV] / B0KB00000013
D1150	AU01Z	DIODE	B0HAGM000006
D1152	MA185	DIODE	⚠
D1155	1SS254	DIODE	B0AAED000003
D1157	MA4027L	DIODE	[SUPPLIED / FROM MAV]
D1180	MA7510-TR	DIODE	[SUPPLIED / FROM MAV]
D1230	MA185	DIODE	⚠
D1250	AK06	DIODE	[SUPPLIED / FROM MAV]
D1251	AK06	DIODE	[SUPPLIED / FROM MAV]
D1260	AK04	DIODE	⚠ / B0JAMC000003
D1270	MA185	DIODE	⚠
D1280	MA185	DIODE	⚠
D1301	MA4075N-M	DIODE	
D1302	MA4056N-H	DIODE	[SUPPLIED / FROM MAV]
D1341	MA4130N-L	DIODE	
D1351	MA4056N-H	DIODE	[SUPPLIED / FROM MAV]
D2001	1SS254	DIODE	B0AAED000003
D2002	1SS254	DIODE	B0AAED000003
D4501	1SS254	DIODE	B0AAED000003
D6001	1SS254	DIODE	B0AAED000003
D6002	1SS254	DIODE	B0AAED000003
D6003	MA700A	DIODE	
D6005	1SS254	DIODE	B0AAED000003
D6006	SIR505S	DIODE	B3EA00000040
D6008	1SS254	DIODE	B0AAED000003
D7502	MA4220N	DIODE	
D7602	MA4300N-M	DIODE	
DP7501	A2BD00000040	DISPLAY TUBE	[SUPPLIED / FROM MAV]
F1101	XBA2C16TB0	FUSE	⚠
FL4561	EFCT4R5MS5W	FILTER	
IC1200	UPC1093J	IC	
IC2501	AN3811NK	IC	
IC3001	C1AB00001297	IC	[SUPPLIED / FROM MAV]
IC4501	AN3663FBP-AV	HI-FI IC	[SUPPLIED / FROM MAV]
IC6001	C2CBHF000184	U-CON IC	[SUPPLIED / FROM MAV]
IC6002	RN5VS42CA	IC	
IC6003	PNA4611M08VT	PHOTO DIODE	
IC6004	RPI354N	IC	B3EZ00000001
IC6005	RPI354N	IC	B3EZ00000001
IC7501	M35502AFP	IC	
IP1280	VSF0015A04	IC PROTECTOR	⚠
JK3002	VJJ0675	PIN JACK 3-PIN	K2HA612B0027
K4001	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K4006	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K4009	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	

Ref. No.	Part No.	Part Name & Description	Remarks
K4501	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7614	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
K7701	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
L1120	VLF1498G0R3	LINE FILTER	⚠
L1121	VLF1498G0R3	LINE FILTER	⚠
L1250	G0A220G00018	COIL	[SUPPLIED / FROM MAV] / G0A220G00019
L1260	G0A220G00018	COIL	[SUPPLIED / FROM MAV] / G0A220G00019
L2001	VLQ0599J680	COIL 68UH	
L2501	VLQ0599J680	COIL 68UH	
L3002	VLQ0599J391	COIL 390UH	[SUPPLIED / FROM MAV]
L3006	VLQ0599J120	COIL 12UH	
L3008	VLQ0599J180	COIL 18UH	
L3009	VLQ0599J390	COIL 39UH	
L3301	VLQ0822J330	COIL 33UH	[SUPPLIED / FROM MAV]
L3302	VLQ0822J680	COIL 68UH	[SUPPLIED / FROM MAV]
L3303	VLQ0822J680	COIL 68UH	[SUPPLIED / FROM MAV]
L4004	VLQEL05S471K	COIL	G0C471KA0004
L4501	VLQ0599J1R2	COIL 1.2UH	
L4502	VLQ0822J391	COIL 390UH	[SUPPLIED / FROM MAV]
L5001	VLQ0822J680	COIL 68UH	[SUPPLIED / FROM MAV]
L7601	VLQ0822J100	COIL 10UH	[SUPPLIED / FROM MAV]
L7605	VLQ0822J100	COIL 10UH	[SUPPLIED / FROM MAV]
L7701	VLQ0599J5R6	COIL 5.6UH	
LB1120	J0JKB0000028	FILTER	[SUPPLIED / FROM MAV] / J0JKB0000027
LB1210	J0JKB0000028	FILTER	[SUPPLIED / FROM MAV] / J0JKB0000027
LB3001	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB3002	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB4001	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB4002	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB4003	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB4004	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB5040	VLP0146	COIL	
LB5041	VLP0146	COIL	
LB5042	VLP0146	COIL	
LB5043	VLP0146	COIL	
LB5044	VLP0146	COIL	
LB5047	VLP0146	COIL	
LB5048	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB5049	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB6001	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LB6002	VLP0147	COIL	
LB7701	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
LR1150	VLP0392	COIL	
P1102	VJP2073	CONNECTOR (MALE) 3P	⚠
P2001	VJS3837A002	CONNECTOR (FEMALE) 2P	K1KB02A00035

Ref. No.	Part No.	Part Name & Description	Remarks
P2002	VJP3835E012	CONNECTOR (MALE) 12P	[SUPPLIED / FROM MAV] / K1KA12A00127
P2501	VJS3537A009G	CONNECTOR (FEMALE) 9P	K1MN09A00012
P4001	VJS3537A006G	CONNECTOR (FEMALE) 6P	K1MN06A00034
P4002	VJS3837A002	CONNECTOR (FEMALE) 2P	K1KB02A00035
P5001	VJS3537A010G	CONNECTOR (FEMALE) 10P	K1MN10A00036
PP4001	VJP3042G008W	CONNECTOR (MALE) 8P	K1KA08A00163
PP6301	VJP3042G007W	CONNECTOR (MALE) 7P	K1KA07A00084
Q1150	B1DEDR000003	TRANSISTOR	[SUPPLIED / FROM MAV]
Q1151	2SD1992A-R	TRANSISTOR	
Q1152	2SC3311A-S	TRANSISTOR	
Q1153	B1DEDQ000008	TRANSISTOR	[SUPPLIED / FROM MAV]
Q1200	PC123ZY2	PHOTO COUPLER	⚠ / B3PBA0000078
Q1341	2SD1996	TRANSISTOR	
Q2001	2SC1959-Y	TRANSISTOR	
Q2002	2SD601A	TRANSISTOR	
Q3004	2SB709A	TRANSISTOR	
Q3005	2SD601A	TRANSISTOR	
Q3009	2SB709A	TRANSISTOR	
Q3010	2SC1959-Y	TRANSISTOR	
Q4003	2SD1149	TRANSISTOR	
Q4004	2SD601A	TRANSISTOR	
Q4005	2SD602A-R	TRANSISTOR	
Q4006	2SB710A	TRANSISTOR	
Q4007	2SC1959-Y	TRANSISTOR	
Q4501	2SC1959-Y	TRANSISTOR	
Q6001	2SD601A	TRANSISTOR	
Q6002	PNB2301MBV	TRANSISTOR	
Q6003	PNB2301MAV	TRANSISTOR	
QR3011	UN2213	TRANSISTOR-RESISTOR	
QR3150	UN2213	TRANSISTOR-RESISTOR	
QR4001	UN2111	TRANSISTOR	
QR4504	UN2115	TRANSISTOR	
QR4505	UN2215	TRANSISTOR-RESISTOR	
QR4506	UN2215	TRANSISTOR-RESISTOR	
QR6002	UN2211	TRANSISTOR	
R1150	ERDS2TJ105	C.RESISTOR 1/4W 1M	
R1153	ERG2SJ331	M.RESISTOR 2W 330	
R1154	ERDS2TJ105	C.RESISTOR 1/4W 1M	
R1155	ERDS2FJ104	C.RESISTOR 1/4W 100K	
R1156	ERDS2FJ330	C.RESISTOR 1/4W 33	
R1157	ER0S2CKG1601	M.RESISTOR 1/4W 1.6K	
R1158	ERDS2FJ331	C.RESISTOR 1/4W 330	
R1159	ERDS2FJ3R3	C.RESISTOR 1/4W 3.3	
R1160	ERX1SJR51E	M.RESISTOR 1W 0.51	[SUPPLIED / FROM MAV]
R1161	ERDS2FJ101	C.RESISTOR 1/4W 100	
R1162	ERDS2FJ102	C.RESISTOR 1/4W 1K	
R1163	ERDS2FJ101	C.RESISTOR 1/4W 100	
R1200	D1BB1002A012	CHIP RESISTOR	[SUPPLIED / FROM MAV]
R1202	ERJ3GEYF222	M.RESISTOR CH 1/16W 2.2K	[SUPPLIED / FROM MAV]

Ref. No.	Part No.	Part Name & Description	Remarks
R1203	ERJ3GEYF303	M.RESISTOR CH 1/16W 30K	[SUPPLIED / FROM MAV]
R1204	ERDS2FJ123	C.RESISTOR 1/4W 12K	
R1205	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R1206	ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	
R1301	ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	
R1302	ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	
R1303	ERDS2FJ471	C.RESISTOR 1/4W 470	
R1304	ERDS2FJ471	C.RESISTOR 1/4W 470	
R1305	ERDS2FJ471	C.RESISTOR 1/4W 470	
R1341	ERDS2TJ103	C.RESISTOR 1/4W 10K	
R1342	ERDS2TJ103	C.RESISTOR 1/4W 10K	
R1351	ERDS2FJ471	C.RESISTOR 1/4W 470	
R2001	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	
R2002	ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	
R2003	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	
R2004	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R2006	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	D0GB682JA002
R2501	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002
R2504	ERDS2FJ1R5	C.RESISTOR 1/4W 1.5	
R2505	ERDS2FJ1R2	C.RESISTOR 1/4W 1.2	
R2506	ERDS2FJ331	C.RESISTOR 1/4W 330	
R2507	ERDS2FJ330	C.RESISTOR 1/4W 33	
R2508	ERDS2FJ330	C.RESISTOR 1/4W 33	
R2509	ERDS2FJ330	C.RESISTOR 1/4W 33	
R2552	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002
R3001	ERJ3GEYJ622	M.RESISTOR CH 1/16W 6.2K	
R3003	ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	
R3005	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	
R3007	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R3008	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	
R3009	ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	
R3011	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3015	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3016	ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	
R3017	ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	D0GB680JA002
R3018	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3021	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	D0GB273JA002
R3022	MCR03PZHJ561	M.RESISTOR CH 1/16W 560	[SUPPLIED / FROM MAV]
R3024	ERDS2FJ681	C.RESISTOR 1/4W 680	[SUPPLIED / FROM MAV]
R3025	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R3028	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3030	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R3034	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R3035	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R3044	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R3045	ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	
R3048	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R3049	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	
R3150	ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	
R3502	ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	
R4001	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R4002	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R4009	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R4013	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	

Ref. No.	Part No.	Part Name & Description	Remarks
R4014	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R4018	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R4019	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R4020	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R4021	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	
R4037	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R4038	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R4039	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002
R4040	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R4041	ERJ3GEYJ622	M.RESISTOR CH 1/16W 6.2K	
R4042	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R4043	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R4044	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	
R4061	ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	
R4062	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002
R4063	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R4064	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	
R4083	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002
R4500	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R4502	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	D0GB473JA002
R4503	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	D0GB473JA002
R4504	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R4505	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	D0GB682JA002
R4506	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	D0GB682JA002
R4508	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R4509	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	D0GB473JA002
R4510	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	D0GB682JA002
R4511	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	D0GB473JA002
R4512	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	D0GB682JA002
R4520	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R4526	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	D0GB681JA002
R4530	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R4532	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R4534	ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	D0GB124JA002
R4538	ERJ3GEYJ303	M.RESISTOR CH 1/16W 30K	
R4539	ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	
R4540	ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	
R4562	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R4563	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R4581	MCR03PZHJ561	M.RESISTOR CH 1/16W 560	[SUPPLIED / FROM MAV]
R4582	MCR03PZHJ561	M.RESISTOR CH 1/16W 560	[SUPPLIED / FROM MAV]
R4601	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	D0GB273JA002
R4602	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	D0GB682JA002
R6001	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R6002	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R6003	ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	
R6004	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R6005	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R6006	ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	D0GB183JA002
R6007	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R6008	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R6009	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	D0GB473JA002
R6010	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R6011	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002

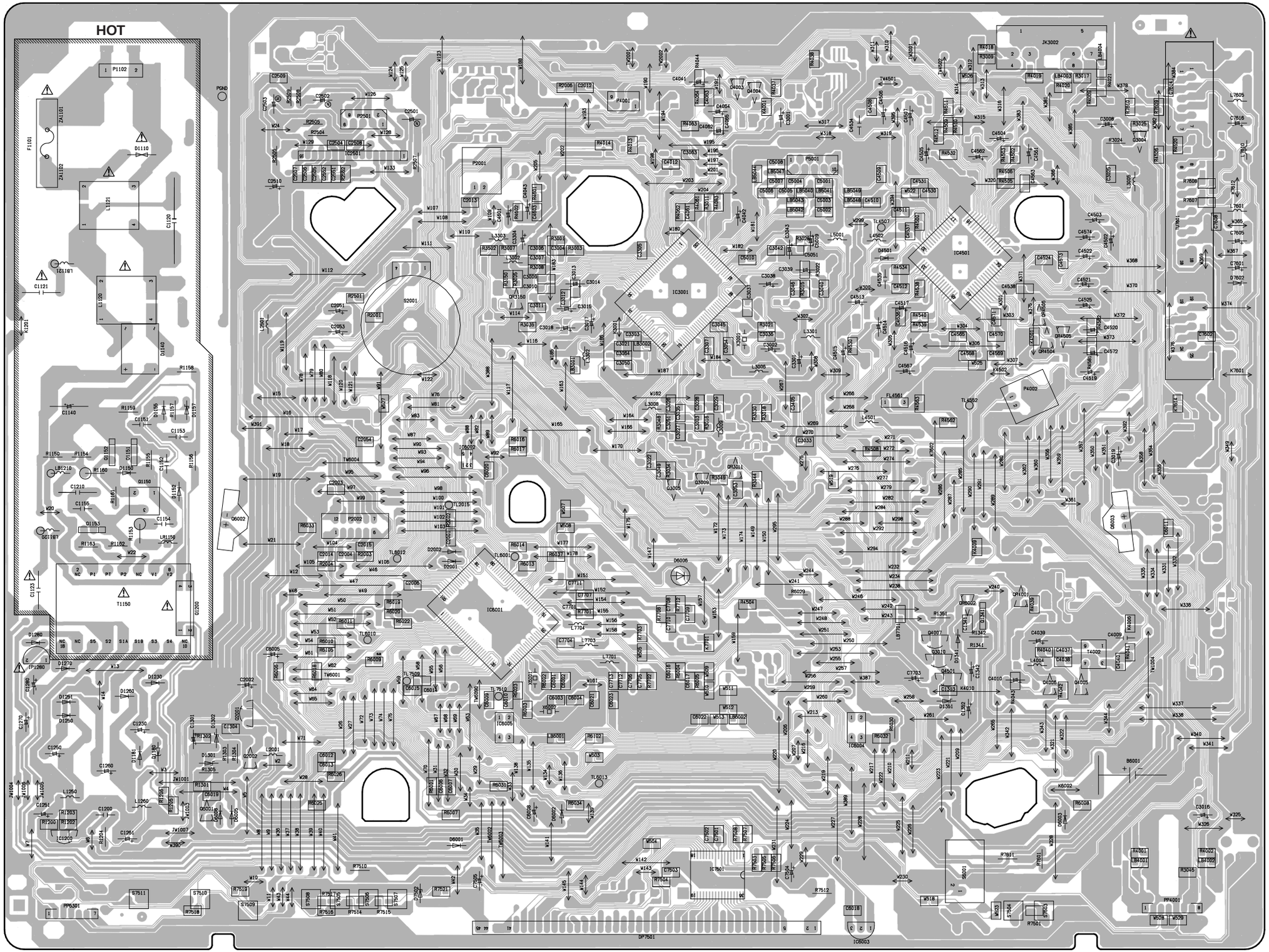
Ref. No.	Part No.	Part Name & Description	Remarks
R6013	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R6014	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R6016	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R6017	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R6018	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R6019	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	D0GB473JA002
R6020	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	D0GB223JA002
R6022	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002
R6023	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	D0GB332JA002
R6025	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	D0GB223JA002
R6026	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	D0GB223JA002
R6029	ERDS2FJ121	C.RESISTOR 1/4W 120	
R6030	ERDS2TJ181	C.RESISTOR 1/4W 180	
R6031	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	D0GB273JA002
R6032	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	D0GB273JA002
R6033	ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	D0GB393JA002
R6034	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	D0GB273JA002
R6037	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002
R6102	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R6105	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R7501	ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	
R7503	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	D0GB103JA002
R7504	ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	
R7505	ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	
R7506	ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	
R7507	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R7508	ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	
R7510	ERDS2FJ821	C.RESISTOR 1/4W 820	
R7512	ERDS2FJ150	C.RESISTOR 1/4W 15	[SUPPLIED / FROM MAV]
R7514	ERJ3GEYJ362	M.RESISTOR CH 1/16W 3.6K	D0GB362JA002
R7515	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	
R7516	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	
R7517	ERJ3GEYJ362	M.RESISTOR CH 1/16W 3.6K	D0GB362JA002
R7518	ERJ3GEYJ912	M.RESISTOR CH 1/16W 9.1K	[SUPPLIED / FROM MAV]
R7519	ERJ3GEYJ512	M.RESISTOR CH 1/16W 5.1K	
R7521	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	
R7601	ERDS2FJ102	C.RESISTOR 1/4W 1K	
R7607	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R7608	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R7609	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R7610	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R7701	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	
R7702	ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	
R7703	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R7708	MCR03PZHJ561	M.RESISTOR CH 1/16W 560	[SUPPLIED / FROM MAV]
R7712	ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	
S2001	VSS0520	MODE SW	
S6001	K0C111A00003	SWITCH	[SUPPLIED / FROM MAV]
S7503	EVQ11L07B	SWITCH	
S7504	EVQ11G07K	SWITCH	
S7505	EVQ11G07K	SWITCH	
S7506	EVQ11L07B	SWITCH	
S7507	EVQ11G07K	SWITCH	

Ref. No.	Part No.	Part Name & Description	Remarks
S7508	EVQ11404M	SWITCH	
S7509	EVQ11404M	SWITCH	
S7510	EVQ11L07B	SWITCH	
S7511	EVQ11G07K	SWITCH	
T1150	G4D2A0000051	SWITCHING TRANSFORMER	⚠ / [SUPPLIED / FROM MAV]
T4002	VLT0948	TRANSFORMER	[SUPPLIED / FROM MAV]
TU7601	ENG56720G1	TUNER	⚠ / [SUPPLIED / FROM MAV]
X3001	VSX0803	CRYSTAL OSCILLATOR	
X6001	H0A120500002	CRYSTAL OSCILLATOR	[SUPPLIED / FROM MAV]
X6002	VSX1022	CRYSTAL OSCILLATOR	
		MISCELLANEOUS	
	EYF52BC	FUSE HOLDER	
	EYF52BC	FUSE HOLDER	
	VSC4998	HA ANGLE	
■	VEP04770A	FRONT C.B.A.	(RTL) / [SUPPLIED / FROM MAV]
JK4801	VJJ0573	3-PIN AV JACK	K2HA303A0004
PS4801	VJS3042F008W	CONNECTOR (FEMALE) 8P	[SUPPLIED / FROM MAV] / K1KB08B00028
S4802	EVQ11G07K	SWITCH	
S4803	EVQ11G07K	SWITCH	
		MISCELLANEOUS	
	VGQ6104	FRONT PCB HOLDER (L)	[SUPPLIED / FROM MAV]
■	VEP06E11A	JOG SHUTTLE C.B.A.	(RTL) / [SUPPLIED / FROM MAV]
PS6301	VJS3042F007W	CONNECTOR (FEMALE) 7P	K1KB07B00013
S6309	VSQ0817	JOG SHUTTLE	
		MISCELLANEOUS	
	VGQ6105	FRONT PCB HOLDER (R)	[SUPPLIED / FROM MAV]
■	----------	CYLINDER STATOR C.B.A.	
		MISCELLANEOUS	
	VJS3537B009G	CONNECTOR (FEMALE) 9P	
	HW-300A-DF	HALL IC	B4AAB0000007

MAIN C.B.A.			
Transistor		Test Land	
Q1150	B-2	TL2015	B-3
Q1151	C-2	TL4507	D-5
Q1152	C-2	TL4552	C-5
Q1153	B-2	TL6001	B-4
Q1200	B-2	TL6010	B-3
Q1341	B-5	TL6012	B-3
Q2001	B-3	TL6013	A-4
Q2002	A-3	TL7509	B-3
Q3004	D-6	TL7510	B-4
Q3005	C-4		
Q3009	C-4	PGND	D-2
Q3010	B-5		
Q4003	D-4	Test Wire	
Q4004	D-5	TW1004	B-6
Q4005	B-6	TW2001	D-4
Q4006	B-6	TW2002	D-4
Q4007	B-5	TW3001	D-5
Q4501	B-5	TW4501	D-5
Q6001	A-2	TW4502	D-5
Q6002	B-3	TW6001	B-3
Q6003	B-6	TW6002	A-4
		TW6003	A-4
Transistor & Resistor		TW6004	C-3
QR3011	C-4	TW6090	B-3
QR3150	C-4		
QR4001	B-6	Connector	
QR4504	C-6	P1102	D-2
QR4505	C-6	P2001	D-3
QR4506	C-6	P2002	B-3
QR6002	B-5	P2501	D-3
		P4001	D-4
Integrated Circuit		P4002	C-6
IC1200	A-2	P5001	D-5
IC2501	D-3	PP4001	A-6
IC3001	C-4	PP6301	A-2
IC4501	C-5	TU7601	D-6
IC6001	B-4		
IC6002	C-3		
IC6003	A-5		
IC6004	B-5		
IC6005	B-4		
IC7501	A-4		

ADDRESS INFOMATION

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.



1	2	3	4	5	6

VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
VIDEO MAIN SIGNAL PATH IN REC MODE
CAPSTAN SERVO PHASE LOOP
CAPSTAN SERVO SPEED LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP

(A) : AUDIO SECTION
(V) : VIDEO SECTION
(P) : POWER SECTION

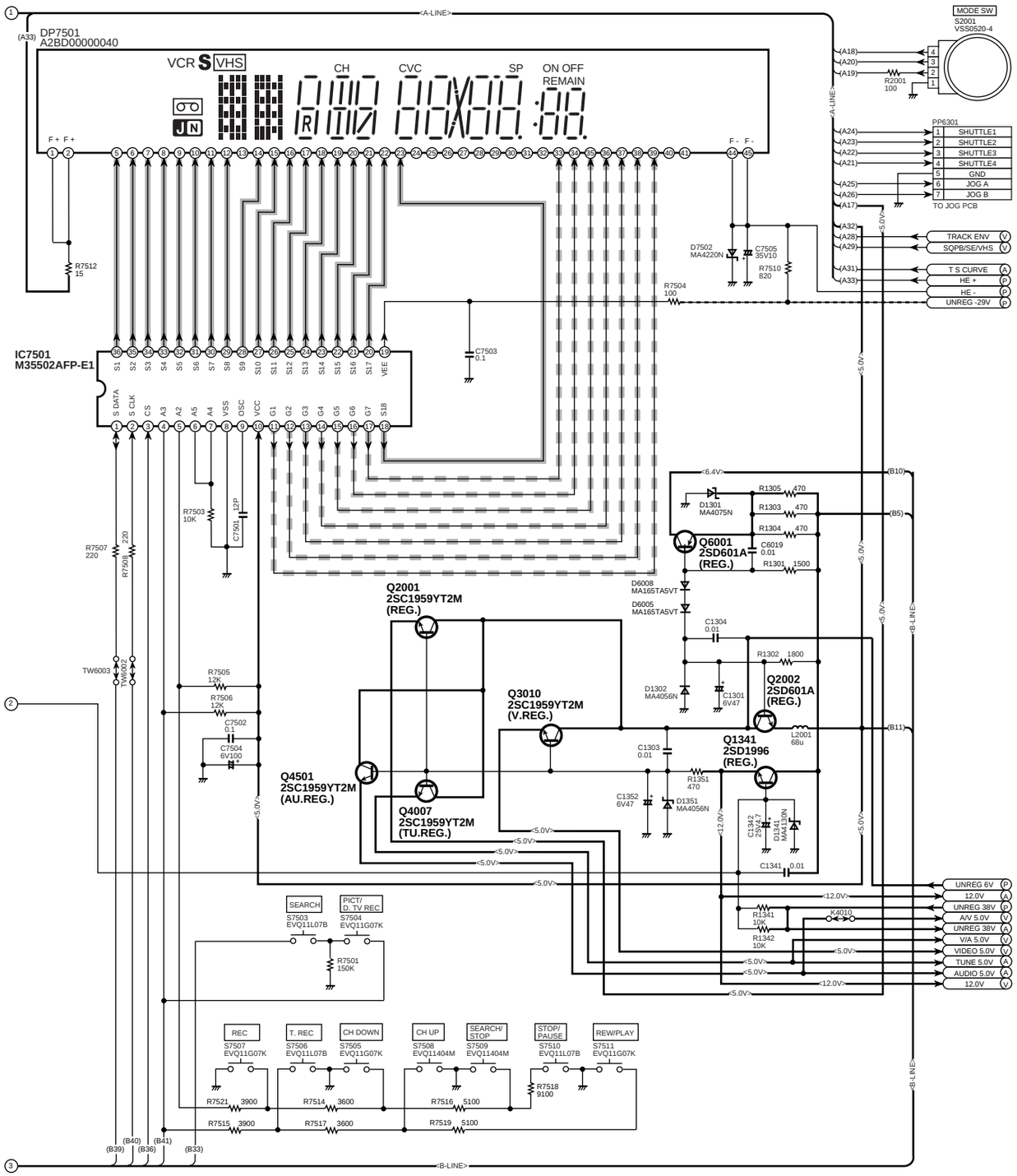
IC2501 AN3811NK
IC6001
C2CBHF00188
IC6003
PNA4611M08VT
Q6003
PNB2301MAV
S PHOTO
Q6002
PNB2301MBV
T PHOTO
D6006
SIR505STA47
SENSOR
S6001
KOC111A00003
SAFETY
TAB SW
TW6001
H SW
TW2001
PB CTL
TW2002
IC6004
RPI354N
S REEL
IC6005
RPI354N
T REEL
IC6002
RN5VS42CA-TR
QR6002
UN2211
(P OFF-H: OFF)

P2501 TO CYL
P2001 TO LOADING M
P2002 TO CAP PCB

NOTE : DO NOT USE ANY PARTS NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.
WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE : THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

GRID CONTROL SIGNAL PATH
SEGMENT CONTROL SIGNAL PATH



IMPORTANT SAFETY NOTICE:
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WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

SYSTEM CONTROL & SERVO ICs VOLTAGE CHART (SP MODE)

Ref.No.	IC2501																		
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			
STOP	14.4	14.4	14.7	1.1	5.0	1.0	1.0	0.5	2.3	1.3	0	3.8	3.8	3.9	0	14.4			
PLAY	14.3	14.3	14.6	1.1	5.0	1.0	1.0	0.4	2.3	1.3	0	3.8	3.8	3.8	0	14.3			
REC	14.3	14.3	14.6	0.8	5.0	1.0	1.0	0.4	2.3	1.3	0	3.8	3.8	3.8	0	14.3			
F.F	14.1	14.1	14.5	0.8	5.0	1.0	1.1	0.4	2.4	1.3	0	3.8	3.8	36.8	0	14.2			
REW	14.1	14.1	14.5	1.1	5.0	1.0	1.1	0.5	2.3	1.3	0	3.8	3.8	3.8	0	14.0			

Ref.No.	IC6001																		
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.8	0	2.4	0	0	4.9	4.8	4.7	1.0	0	0	4.9	0	4.9	4.8	0	4.8	-	0	0
PLAY	0.8	0	2.3	0.3	0	4.9	4.7	4.7	1.6	0	4.6	4.9	0	4.9	4.8	0	4.8	-	-	0
REC	0.8	0	2.3	0.3	0	4.9	4.8	4.6	0	0	4.6	4.8	0	4.9	4.8	0	4.8	-	0	4.7
F.F	0.8	0	2.3	0.3	0	4.9	4.7	4.5	0.8	0	4.8	4.9	0	4.9	4.7	0	4.8	-	0	0
REW	0.8	0	2.3	0.4	0	4.9	4.6	4.5	3.5	0	4.8	4.9	0	4.9	4.8	0	4.8	-	0	0

Ref.No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	0	4.8	0	0	0	0	0	4.8	0	0	0	1.5	1.5	4.8	-	-	0
PLAY	0	0	0	0	0	0	0	0	0	0	4.8	0	0	4.8	1.5	1.5	4.8	-	-	0
REC	0	0	0	4.7	4.8	0	0	0	0	0	4.8	0	0	4.8	1.5	1.5	4.8	-	-	0
F.F	0	0	0	0	0	0	0	0	0	0	4.8	4.8	0	4.8	1.5	1.5	4.8	-	-	0
REW	0	0	0	0	4.8	0	0	0	0	0	4.8	4.9	0	4.9	1.6	1.6	4.9	-	-	0

Ref.No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	4.8	0	0	4.4	4.4	0	1.3	2.1	0	2.2	4.2	2.2	5.0	2.1	1.5	1.9	0	0	0	0
PLAY	4.8	4.8	0	4.6	4.6	0	1.3	2.0	0	2.2	4.2	2.2	5.0	2.1	1.5	1.9	0	0	0	0
REC	4.8	4.8	0	0	0	0	1.3	2.0	0	2.2	4.2	2.2	5.0	2.1	1.5	1.9	0	0	0	0
F.F	4.9	0	0	2.9	2.9	0	1.3	2.1	0	2.2	4.2	2.2	5.0	2.0	1.5	1.9	0	0	0	0
REW	4.8	0	0	2.9	2.9	0	1.3	2.1	0	2.2	4.2	2.2	5.0	2.0	1.4	1.9	0	0	0	0

Ref.No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	0	0	2.5	0	0	3.5	3.5	3.7	3.7	3.5	2.4	0	0	0	2.3	4.9	0.1	5.0
PLAY	0	0	0	0	2.7	0	0	3.4	3.4	3.7	3.7	3.5	2.4	0	0.3	2.4	2.3	4.9	5.0	5.0
REC	0	0	0	0	2.5	0	0	4.1	3.6	3.7	3.6	3.5	2.4	0	0.3	2.4	2.3	4.9	5.0	5.0
F.F	0	0	0	0	3.7	0	0	4.1	3.9	4.0	3.7	3.6	2.5	0	4.5	4.8	2.3	5.0	2.3	2.3
REW	0	0	0	0	3.7	0	0	3.7	3.7	3.8	3.6	2.5	4.8	4.5	4.8	2.3	5.0	2.2	2.7	5.0

Ref.No.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0	0	0	4.1	0	2.4	2.4	0	0	1.1	2.4	2.4	0	2.4	2.4	2.4	2.4	4.9	4.9	4.8
PLAY	0	0	0	4.1	0	2.4	2.4	0	0	1.1	2.4	2.4	0	2.4	2.4	2.4	2.3	4.9	4.9	4.8
REC	0	0	0	4.1	0	2.4	2.4	0	0	0.8	2.4	2.4	0	2.9	2.1	2.4	2.4	4.9	4.9	0
F.F	0	0	0	4.2	0	2.5	2.5	0	0	1.1	2.5	2.5	0	2.4	2.4	2.4	2.4	5.0	5.0	4.9
REW	0	0	0	4.2	0	2.5	2.5	0	0	0.8	2.5	2.5	0	2.4	2.4	2.4	2.5	5.0	5.0	4.9

Ref.No.	IC6002					IC6003					IC6004									
MODE	1	2	3	4	5	1	2	3			1	2	3	4						
STOP	4.9	4.9	0	0	0	4.9	0	4.9			1.1	2.2	5.0	0						
PLAY	4.9	4.9	0	0	0	4.9	0	4.9			1.1	2.2	5.0	0						
REC	4.9	4.9	0	0	0	4.9	0	4.9			1.1	2.2	5.0	0						
F.F	5.0	5.0	0	0	0	4.9	0	4.9			1.1	2.2	2.2	0						
REW	5.0	5.0	0	0	0	4.9	0	4.9			1.1	2.2	2.3	0						

Ref.No.	IC7501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.6	3.8	2.5	4.9	4.9	0	0	0	2.3	4.9	-24.7	-25.0	-25.1	-25.0	-24.9	-24.9	-24.9	-18.5	-29.8	-29.6
PLAY																				
REC																				
F.F																				
REW																				

Ref.No.	IC7501																		
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
STOP	-18.5	-20.0	-14.0	-14.0	-19.0	-14.5	-14.6	-14.0	-18.6	-15.0	-15.0	-15.5	-24.4	-20.0	-10.5	-15.0			
PLAY																			
REC																			
F.F																			
REW																			

SYSTEM CONTROL & SERVO TRANSISTORs VOLTAGE CHART (SP MODE)

Ref.No.	Q1341			Q2001			Q2002			Q3010			Q4007			Q4501		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	12.2	14.7	12.9	5.0	5.7	5.7	5.0	5.7	5.7	5.0	5.6	5.7	5.0	5.6	5.7	5.0	5.6	5.7
PLAY	12.3	14.7	12.9	5.0	5.9	5.8	5.0	5.9	5.7	5.0	5.8	5.8	5.0	5.8	5.7	5.0	5.8	5.8
REC	12.3	14.7	12.9	5.0	5.8	5.8	5.0	5.8	5.7	5.0	5.7	5.7	5.0	5.7	5.7	5.0	5.7	5.8
F.F	12.5	14.5	13.2	5.0	6.1	5.7	5.1	6.1	5.8	5.0	6.0	5.7	5.0	6.0	5.7	5.0	6.0	5.7
REW	12.5	14.5	13.2	5.0	6.0	5.7	5.1	6.1	5.8	5.0	6.0	5.7	5.0	6.0	5.7	5.0	5.9	5.7

Ref.No.	Q6001			Q6002			Q6003											
MODE	E	C	B	-	+		-	+										
STOP	6.4	7.7	7.0	0	4.7		0	4.8										
PLAY	6.4	7.7	7.0	0	4.7		0	4.8										
REC	6.4	7.7	7.0	0	4.7		0	4.8										
F.F	6.4	7.6	7.1	0	4.7		0	4.8										

: VIDEO MAIN SIGNAL PATH IN REC MODE
: VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
: AUDIO MAIN SIGNAL PATH IN REC MODE
: AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

A TO:AUDIO SECTION
S TO:SYSTEM CONTROL & SERVO / TIMER SECTION

IC3001
C1AB00001297

Q3004
2SB709A
(AMP)

Q3009
2SB0709A0L
(AMP)

QR3011
UN2213
(PICT CONT .)

Q3005
2SD601A
(FSC DRIVE)

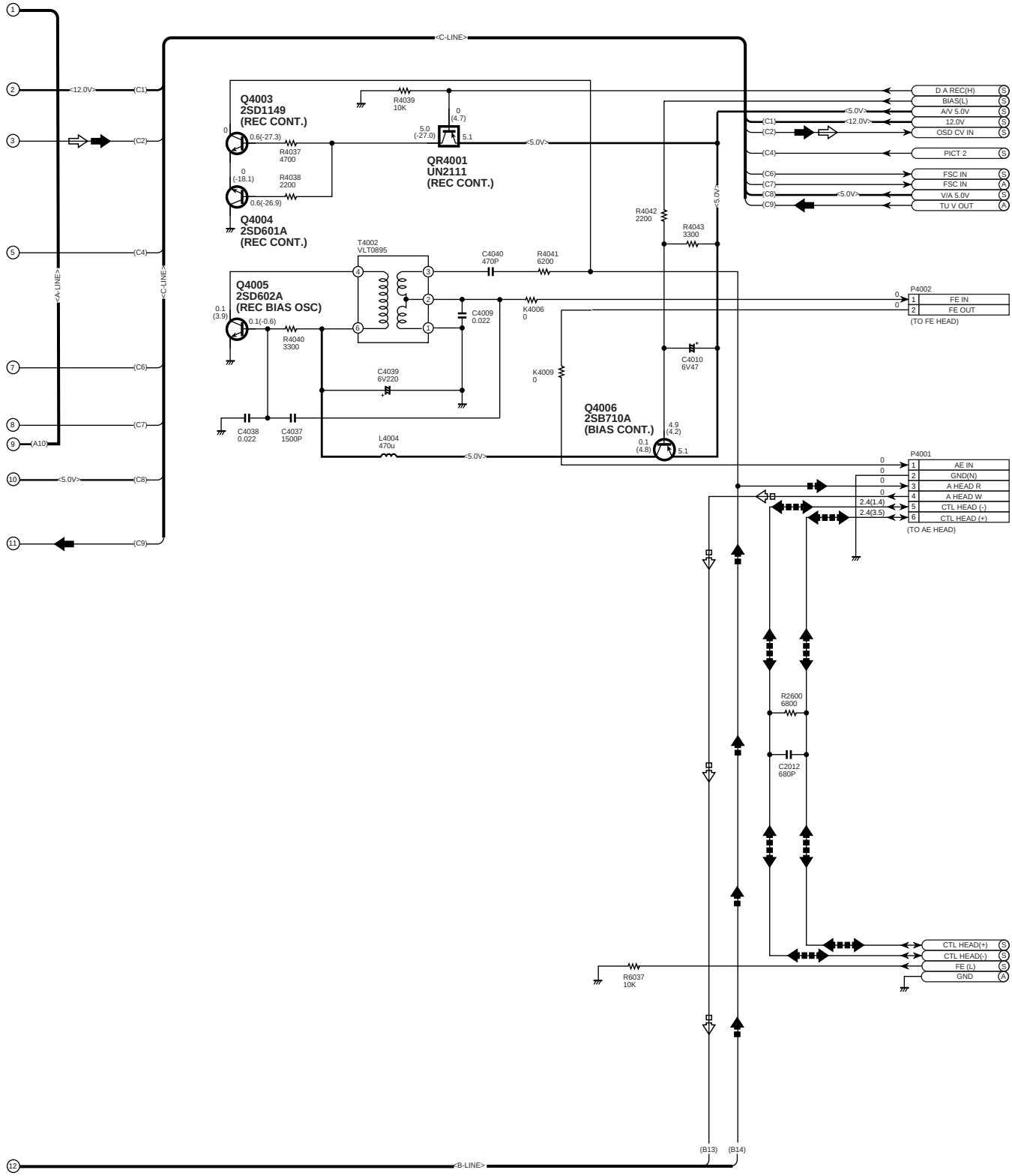
QR3150
UN2213
(PICT CONT.)

P5001
AR 10
A COM 9
AL 8
GND 7
SP L 6
SP COM 5
SP R 4
EP L 3
EP COM 2
EP R 1

S VIDEO 5.0V
S BVA 1,2
S ART V/H/N
S IC2 CLK
S IC2 DATA
S KILLER
S OSD V OUT
A V OUT
S VIDEO H SW
S TRACK ENV
A AL
A A COM
A AR

S SQPB/SE/VHS
S A MUTE
A L ch AUDIO IN
A NORA A.IN
S PICT 1
S AVR (L)
A R.VIDEO IN
A FRONT V
S GND
S 5.0V

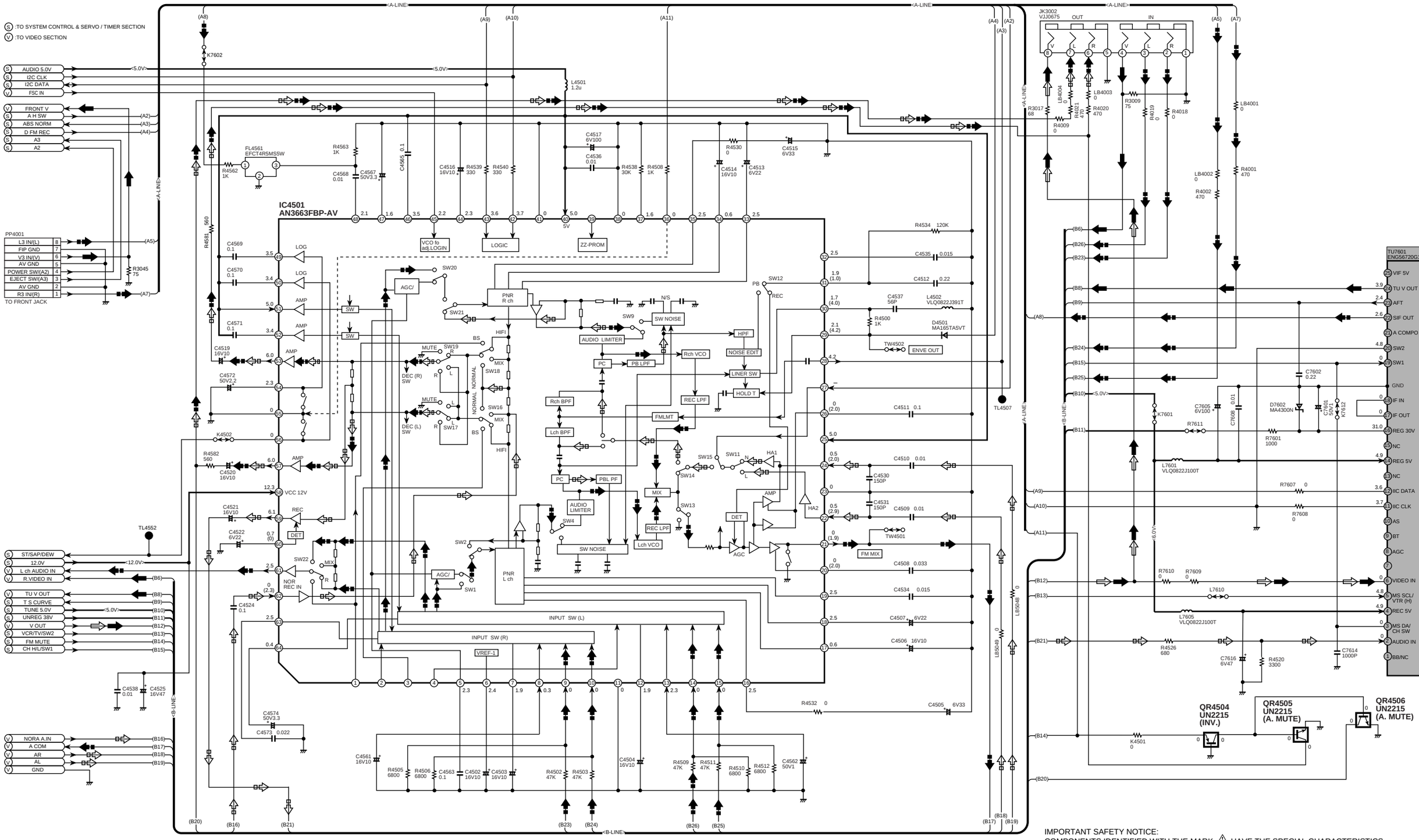
HEAD SW 1
HEAD SW 2
KILLER DET OUT
LIMTER
X TAL VCO/OSC
CR DET 2FSC
CLOCK
TANK
2FSCVCO
FH SYNC
ME SECAM DET
PB/REC DISCRI
REC AFC
REC APC
PB APC
COLOR KILLER ID DET
ENV DET
HPF
1/2 2FL VCC
DOWN CONV
1/2 PHASE SW
ACC DET
APC SW
4PHASE GEN
COMP
DET
2M LPF
HPF FHTRAP
ACC
C.K
B.E
TRAP
PULSE GEN
L SECAM
LPF
MIX LEVEL ADJ
629 TRAP
FM AGC
P EQ
S DL
G EQ
DET
DO DET
EDGE DELAY
DLIM
DEMO
SUB LPF
1MHPF
7MHPF
LAG LERD LPF
FM MOD
IO/DEV ADJ
S DET
MAIN EMPH CARRIER OFFSET W.C/DC
FROM ME SECAM DET
FBC/ALC
N.L. EMPH
N.L. DE EMPH
MAIN DE EMPH
SERIAL CONT INTERFACE
VCA
LEVEL DET1
LEVEL DET2
DELAY
CLPH
MAIN CONV1
MAIN CONV2
BPF
CCD LPF
C.K
N~P
B.D
6dB AMP
C SQUELCH
LMIT WHAITH
SYNC SEP
CLEAR SYNC
SQUELCH
CLAMP FEED BACK VIDEO ALC
VIDEO AGC
REC
AGC DEL
PB ALC
Y APA.
D.E.
N.C.
YNR
REC DO/
OO
CLAMP
LPF
ATT (D10dB)
CH1
CH2
CH3
SW16
K3001
C3019 50V1
L3008 18u
C3051 22P
C3016 50V1
C3017 50V2.2
C3018 50V1
C3011 0.1
R3035 1K
CCD GND
CCD VCC
CCD
CLOCK DRIVER
C.CCD
Y CCD
MODE CONT
L3302 VLQ0822 J680T
LB3001 0
C3064 56P
C3021 560P
C3049 0.22
K7614 0
R3034 2200
C3303 0.01
C3022 0.01
LB3002 0
R3044 2200
R3048 220
R3049 3900
C3049 0.22
R3502 1500
R3150 12K
R3007 2200
R3008 15K
C3009 0.1
C3010 0.1
C3012 0.1
C3013 0.1
C3014 25V3.3
C3015 16V10
R3001 6200
C3004 150P
R3003 1500
C3006 0.1
C3007 18P
L3002 390u
R3005 3900
R4601 27K
C4043 6V22
C4601 16V10
R4602 6800
C4603 680P
C4012 0.1
R4014 3300
R4013 15K
C3001 16V10
K4001 0
R4041 15K
R4044 15K
C4041 25V4.7
C4063 1800P
R4064 15K
C4064 25V3.3
C4065 1800P
R4063 220
C4062 6V33
R4062 10K
R4061 330K
C4061 0.01
C3043 25V3.3
C3042 0.01
R3028 1K
C5051 0.1
C5001 0.01
C5002 0.01
C5003 0.01
C5004 0.01
C5005 0.01
C5007 0.01
C5008 0.01
C5010 0.1
C5009 6V100
L5001 VLQ0822 J680T
LB5041 VLP0146
LB5042 VLP0146
LB5043 VLP0146
LB5044 VLP0146
LB5047 VLP0146
LB 5040 VLP0146
C4042 25V 4.7
C3063 2200P
L3303 VLQ0822J680T
R3011 0
R4083 10K
C4061 0.01
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
SW11
SW12
SW14
SW15
SW16
SW17
SW18
SW19
SW20
SW21
SW22
SW23
SW24
SW25
SW26
SW27
SW28
SW29
SW30
SW31
SW32
SW33
SW34
SW35
SW36
SW37
SW38
SW39
SW40
PREAMP
REC EQ
BAND GAP
A GND
Y VCC
HA GND
HA VCC
AVCC
SQPB(H)/ UESECAM(M)
MUTE
C3001 6V470
L3005
R3024 680
C3025 0.1
R3025 470
R3015 0
C3046 0.01
TW3001
C3040 4700P
C3039 25V4.7
R3022 560
C3037 0.022
C3038 50V4.7
R3021 27K
X3001 VSX0803
C3036 0.1
C3002 25V4.7
C3045 3P
L3006 VLQ0809J120T
C3033 0
C3405 1000P
R3018 0
C3054 0.1
R3030 0
C3307 0.22
C3001 0.47
C3056 0.01
R3031 330T
C3029 0.01
R3016 330
L3009 39u
C3027 27P
C3028 0.1
C3035 0
C3003 0.01
C3026 0.1
C3022 0.01
R3036 0
C3035 0
C3026 0.1
C3027 27P
R3044 2200
R3048 220
R3049 3900
C3049 0.22
K7614 0
C3064 56P
C3021 560P
L3302 VLQ0822 J680T
LB3001 0
C3303 0.01
C3022 0.01
LB3002 0
C3051 22P
C3016 50V1
C3017 50V2.2
C3018 50V1
C3011 0.1
R3035 1K
C3019 50V1
K3001
L3008 18u



NOTE : THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH NTSC COLOUR SIGNAL. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH NTSC COLOUR SIGNAL. (SP MODE)

NOTE : DO NOT USE ANY PARTS NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.
WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

VIDEO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

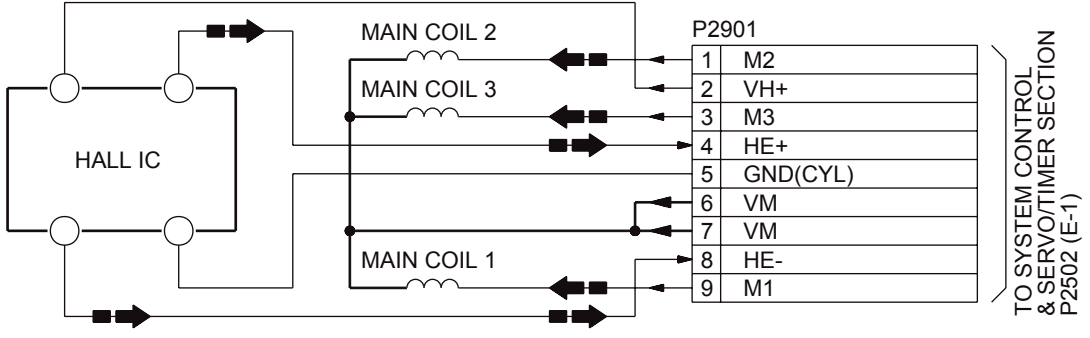


NOTE : THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH NTSC COLOUR SIGNAL. (SP MODE) THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH NTSC COLOUR SIGNAL. (SP MODE)

NOTE : DO NOT USE ANY PARTS NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.
WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

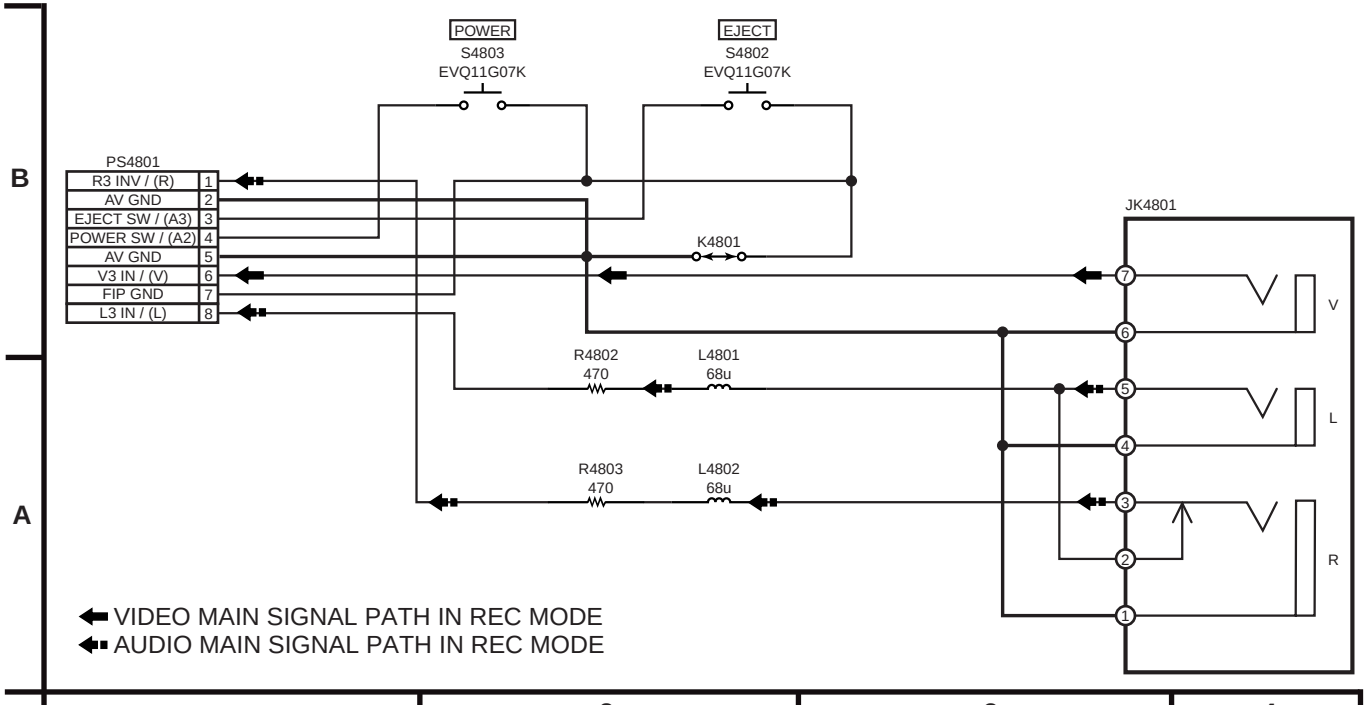
CYLINDER SERVO SPEED LOOP

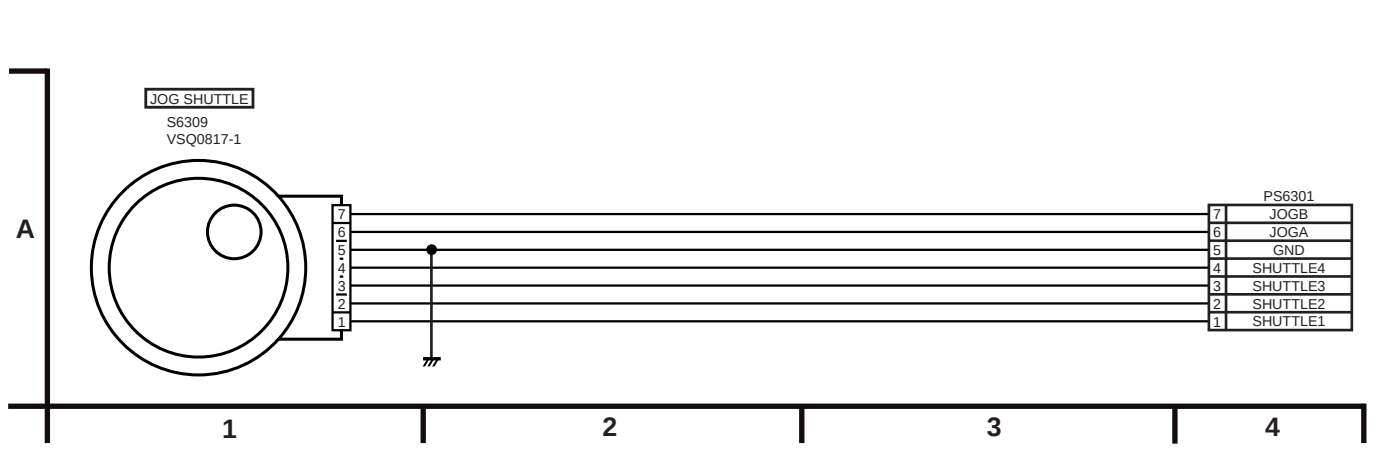


NOTE:□DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR □ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

A

1 2 3

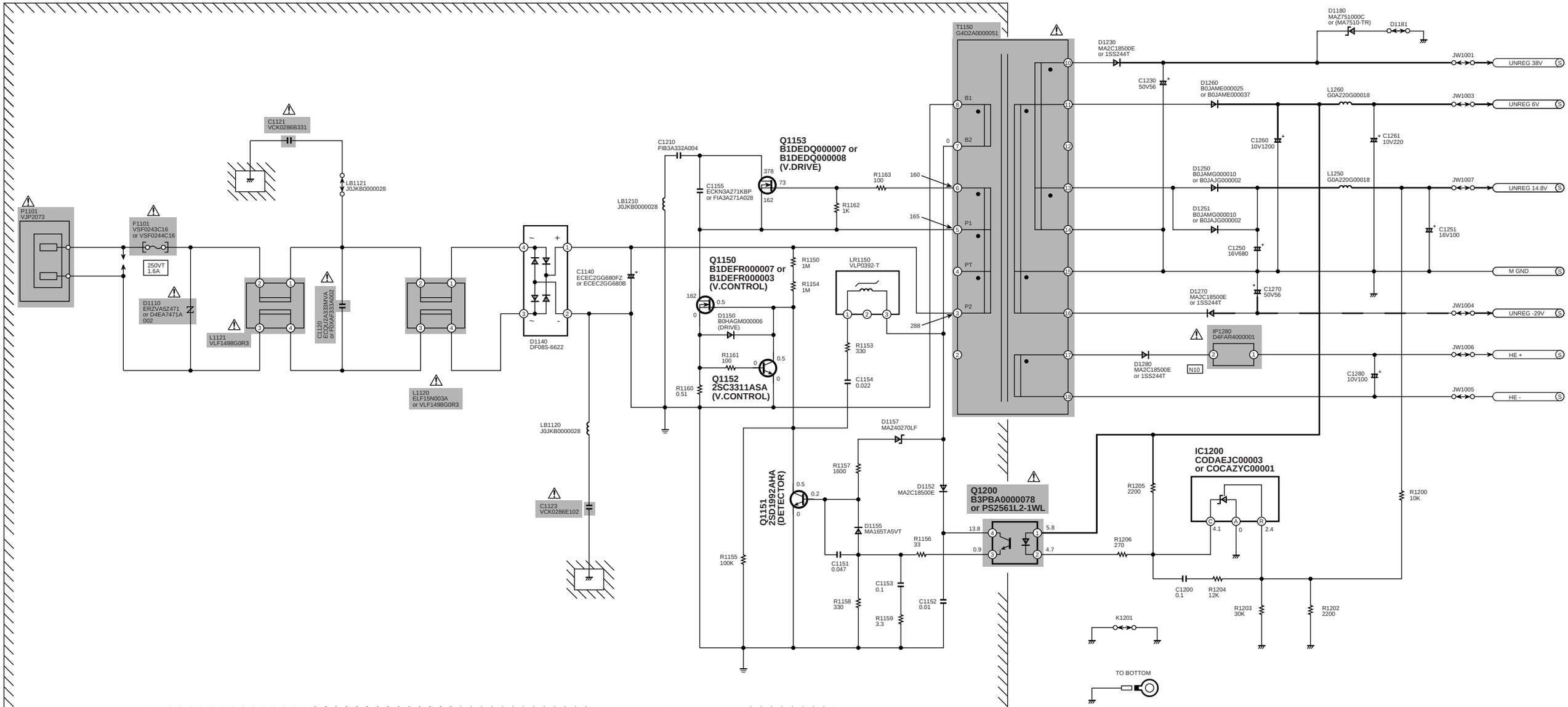

POWER
S4803
EVQ11G07K
EJECT
S4802
EVQ11G07K
PS4801
R3 INV / (R) 1
AV GND 2
EJECT SW / (A3) 3
POWER SW / (A2) 4
AV GND 5
V3 IN / (V) 6
FIP GND 7
L3 IN / (L) 8
K4801
JK4801
R4802
470
L4801
68u
R4803
470
L4802
68u
V
L
R
VIDEO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
B
A
1
2
3
4


JOG SHUTTLE
S6309
VSQ0817-1
7
6
5
4
3
2
1
PS6301
7 JOGB
6 JOGA
5 GND
4 SHUTTLE4
3 SHUTTLE3
2 SHUTTLE2
1 SHUTTLE1
A
1
2
3
4

CAUTION

THE ▨ MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT. PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

HOT

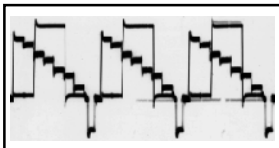
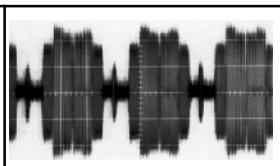
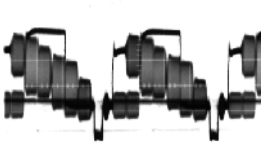
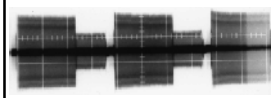
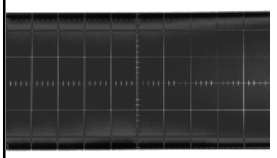
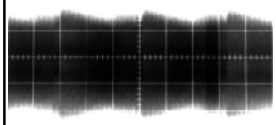
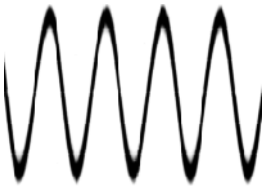
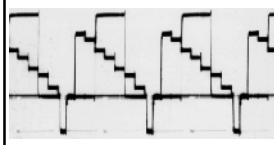
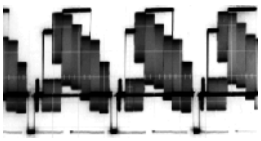
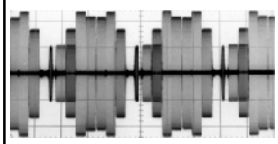
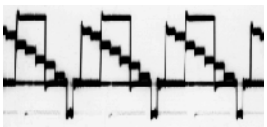
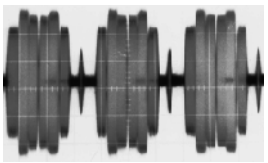
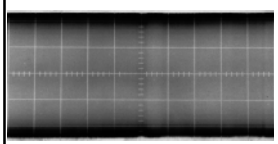
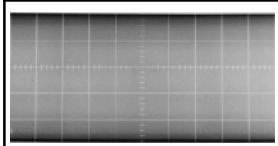
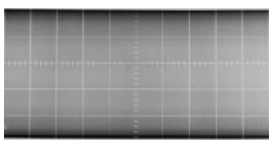
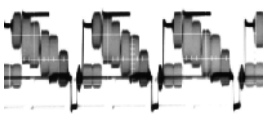
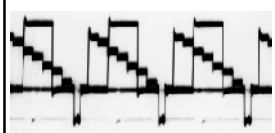
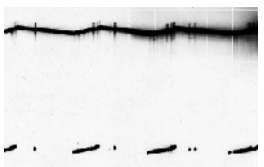
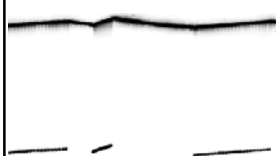
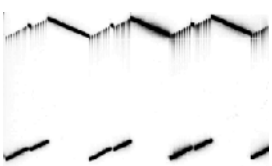
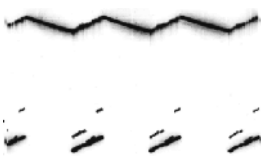
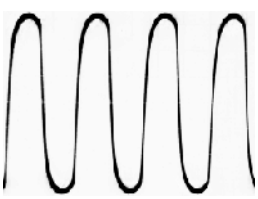
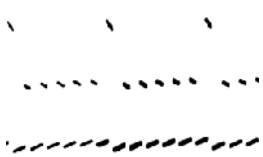
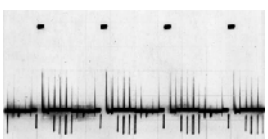
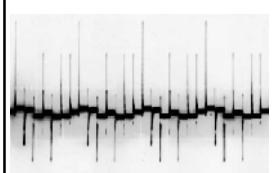
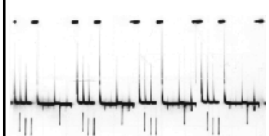


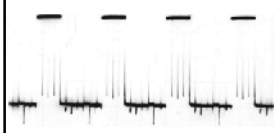
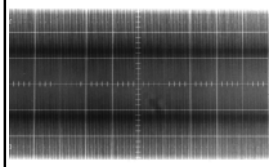
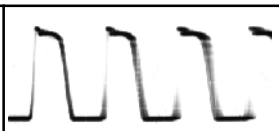
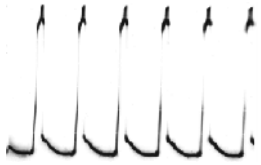
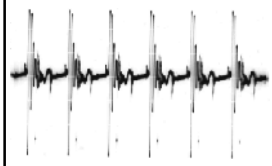
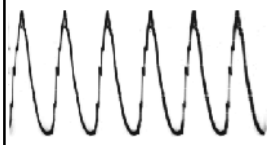
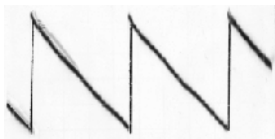
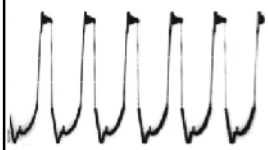
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

NOTE : THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

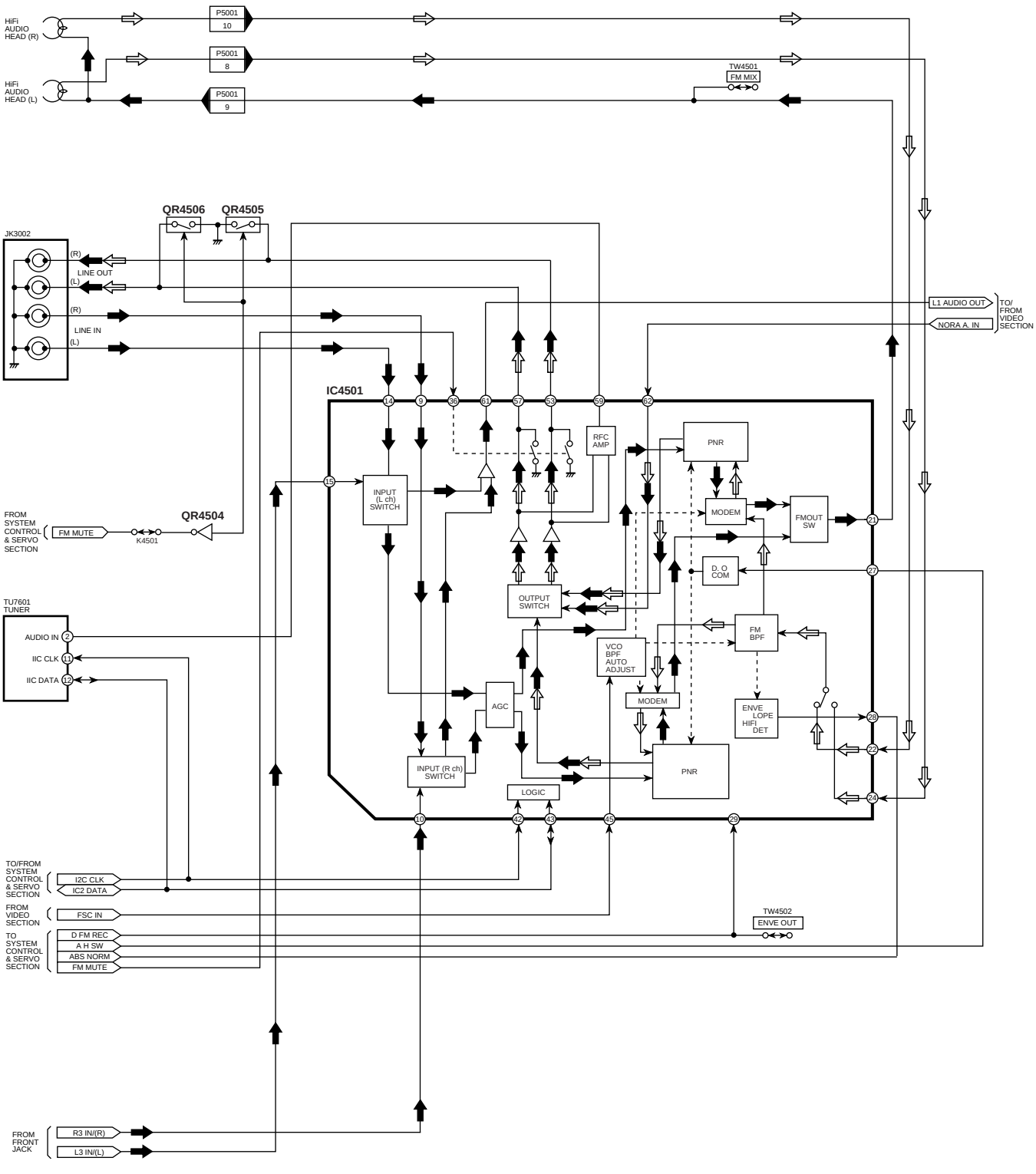
NOTE1: WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT,SET THE GND TERMINAL OF MEASURING POINT AS FOLLWS.
PRIMARY SIDE... ⏚ SECONDARY SIDE... ⏚
NOTE2:THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 220V.

NOTE : DO NOT USE ANY PARTS NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.
WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

 IC3001- 18,19,23,24 PLAY 0.5Vp-p (20usec. div.) IC3001- 21,42 PLAY 0.4Vp-p (20usec. div.) IC3001- 26,39 PLAY 0.6Vp-p (20usec. div.)	 IC3001- 35 PLAY 0.6Vp-p (20usec. div.) IC3001- 46 PLAY 0.35Vp-p (20usec. div.)	 IC3001- 52 PLAY 2.0Vp-p (20usec. div.)	 IC3001- 54 PLAY 0.3Vp-p (5msec. div.) IC3001- 55,58 PLAY 0.6Vp-p (5msec. div.) IC3001- 60 PLAY 0.4Vp-p (5msec. div.)	 IC3001- 71 PLAY 0.35Vp-p (0.5msec. div.) IC3001- 73 PLAY 0.6Vp-p (0.5msec. div.)
 IC3001- 78,79 PLAY 350mVp-p (5msec. div.)	 IC3001- 4 REC 1.0Vp-p (1msec. div.)	 IC3001- 8 REC 120m Vp-p (1msec. div.)	 IC3001- 18,19,23,24,26 REC 0.55Vp-p (20usec. div.) IC3001- 42 REC 0.5Vp-p (20usec. div.)	 IC3001- 28 REC 1.0Vp-p (20usec. div.) IC3001- 52 REC 2.0Vp-p (20usec. div.)
 IC3001- 35 REC 1.0Vp-p (20usec. div.)	 IC3001- 39 REC 0.6Vp-p (20usec. div.)	 IC3001- 46,60 REC 0.35Vp-p (20usec. div.) IC3001- 58 REC 0.5Vp-p (20usec. div.)	 IC3001- 87,88 REC 1.7Vp-p (1msec. div.)	 IC6001- 18,19 PLAY/ REC 7Vp-p (10msec. div.) IC7501- 3 STOP 6.0Vp-p (5msec. div.)
 IC6001- 35 PLAY/ REC 1.4Vp-p (1msec. div.) IC6001- 36 PLAY/ REC 3.0Vp-p (1msec. div.) IC6001- 39 PLAY/ REC 3.0Vp-p (20usec. div.)	 IC6001- 38 PLAY/ REC 1.5Vp-p (20usec. div.) IC6001- 48 PLAY/ REC 0.5Vp-p (20usec. div.)	 IC6001- 50,52 PLAY/ REC 2.0Vp-p (20usec. div.)	 IC6001- 56 PLAY/ REC 2.0Vp-p (20usec. div.)	 IC6001- 68,69 PLAY/ REC 6.0Vp-p (5msec. div.) IC7501- 1 STOP 6.0Vp-p (5msec. div.)
 IC6001- 70 PLAY/ REC 6.0Vp-p (2msec. div.) IC7501- 2 STOP 6.0Vp-p (2msec. div.)	 IC6001- 71 PLAY/ REC 6.0Vp-p (5msec. div.)	 IC6001- 72 PLAY/ REC 6.0Vp-p (5msec. div.)	 IC6001- 76,77 PLAY/ REC 4.5Vp-p (5msec. div.)	 IC6001- 79,80 PLAY/ REC 7.0Vp-p (2sec. div.)
 IC6001- 86 PLAY/ REC 0.7Vp-p (0.2msec. div.)	 IC6001- 90 PLAY/ REC 5.0Vp-p (10msec. div.)	 IC7501- 11 - 18 STOP 40Vp-p (1msec. div.)	 IC7501- 20 STOP 18.0Vp-p (1msec. div.)	 IC7501- 21,23 - 28 STOP 40Vp-p (1msec. div.)

 IC7501- 22,29 - 36 STOP 40Vp-p (1msec. div.)	 IC4501- 10,15 REC 60mVp-p (1msec. div.) IC4501- 53,57 REC 0.6Vp-p (1msec. div.) IC4501- 61 REC 130mVp-p (1msec. div.)	 IC4501- 21 REC 1.4Vp-p (20usec. div.)	 Q1153 - E STOP 450Vp-p (5usec. div.) Q1153 - B STOP 550Vp-p (5usec. div.) Q1150 - 3 STOP 550Vp-p (5usec. div.)	 Q1153 - C STOP 200Vp-p (5usec. div.)
 Q1150 - 1 STOP 6.0Vp-p (5usec. div.) Q1152 - C STOP 5.0Vp-p (5usec. div.)	 Q1151 - C STOP 5.0Vp-p (5usec. div.) T1150 - 5,6 STOP 450Vp-p (5usec. div.)	 Q1150 - 2 STOP 350mVp-p (5usec. div.) Q1152 - B STOP 200mVp-p (5usec. div.)	 Q1152 - E STOP 130mVp-p (5usec. div.) Q1151 - E STOP 140mVp-p (5usec. div.)	 Q1151 - B STOP 0.5Vp-p (5usec. div.)
 T1150 - 3 STOP 3.5Vp-p (2msec. div.)	 T1150 - 7 STOP 27.0Vp-p (5usec. div.)			

AUDIO MAIN SIGNAL PATH IN REC MODE **AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE**



MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
CAPSTAIN SERVO PHASE LOOP
CAPSTAIN SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP

DP7501
TIMER DISPLAY
FROM POWER SECTION
HE (+)
HE (-)
GRID SIGNAL
SEGMENT SIGNAL

IC7501 TIMER
S DATA
S CLK
CS
G1
G7
S18
S1
AN3
AN2

IC6001 SYSTEM CONTROL & SERVO
IC TALK
IC LSN
IC CLK
FL DRV CS

POWER S4803
EJECT S4802
SEARCH S7503
PICT/ D.TV REC S7504
VCC
REC S7507
CH DOWN S7505
SEARCH/STOP S7509
STOP/PAUSE S7510
T.REC S7506
CH UP S7508
REW/PLAY S7511

TL0201
CAPSTAN MOTOR
L0201
Q0203
Q0201
Q0202
UNREG 14V
H3
H1
H2
LOADING MOTOR

IC0201 CAPSTAN MOTOR DRIVE
MOTOR DRIVE
DIFFERENTIAL AMPRIFIER
TORQUE CONTROL
TL AMP
EC AMP
POSITION SIGNAL PROCESS
TORQUE DIRECTION
CONTROL LOGIC
HALF.WAVE
CURRENT LIMIT
CAP ET
CAP R/F
+5V
UNREG 14V
LOADING
UNLOADING

INPUT		OUTPUT		MODE
PIN 15	PIN 16	PIN 19	PIN 21	
H	L	H	L	FORWARD
L	H	L	H	REWIND
H	H	L	L	BRAKE
L	L	OPEN	OPEN	STOP

CYLINDER STATOR UNIT
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
HALL IC
P2502: M1, HE-, VM, VM, GND, HE+, M3, HE+, M2

IC2501 CLYNDER MOTOR DRIVE
MOTOR DRIVE
DIFFERENTIAL AMPRIFIER
TORQUE CONTROL
PG/FG
SCHMIT
CYL PFG
CYL ET

TO VIDEO SECTION
SP
LC.OSC IN
LC.OSC OUT
TO TUNER
SW 1
SW 2
CH H/L SW1
VCR/TV/SW2
RESET
D VDD
B6001
BACK-UP
K6002
D6003
TW1004
TL7510
D6002
+5V

POS. SW2
POS. SW3
POS. SW1
CTL. HEAD(-)
CTL. HEAD(+)
CAP FG IN
S-PHOTO
T-PHOTO
S2001 MODE SW
P4001 5
P4001 6
CTL HEAD
P2002 4
P0201 4
CAPSTAN FG HEAD
+B
+5V
+5V
+5V

IC6003
IR RECEIVER
IR REMOCON
TL6013
TL6012
IC6004 S-RELL SENSOR
IC6005 T-RELL SENSOR
Q6002 TAKE UP PHOTO SENSOR
D6006 SENSOR LED
Q6003 SUPPLY PHOTO SENSOR
S.REEL PULSE
T.REEL PULSE
S. TAB
SAFETY TAB SW
S6001
32KHz IN
32KHz OUT
12MHz IN
12MHz OUT
X6002
X6001
CV OUT
CV IN
CV IN2
K7701
I2C CLK
I2C DATA
TRACKING ENVE.
ART. V/H/N
VIDEO HSW
D A REC
D FM REC
A MUTE
FM. MUTE
H.SW
TW2001
TO/FROM AUDIO SECTION
TO/FROM VIDEO SECTION
TO AUDIO SECTION
I2C DATA
I2C CLK
OSD VIDEO OUT
OSD VIDEO IN
TRACKING ENVE
ART.V/H/N
H.SW
D FM REC
A .MUTE
FM .MUTE
D A REC

S6309 JOG SHUTTLE
SHUTTLE 1
SHUTTLE 2
SHUTTLE 3
SHUTTLE 4
JOG B
JOG A
P6301 1
P6301 2
P6301 3
P6301 4
P6301 7
P6301 6

ST/SAP/DEW
RESET
IC6002
P.FAIL
PICT 2
A H SW
P OFF
BIAS
Q1341 REG. CONT.
QR6002
PICT2
BIAS

VIDEO MAIN SIGNAL PATH IN REC MODE

VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

IC3001

TW3001

X3001

QR3011

Q3009

Q3005

Q3004

QR3150

TO/FROM SYSTEM & SERVO CONTROL SECTION

VIDEO HSW

TRACK ENV

HEAD SW1

HEAD SW2

LIMTER

ENV DET

HPF

CLOCK

X TAL VCO/OSC

CR DET 2FSC

2FSCVCO

FH SYNC

VCA

SW26

CCD LPF

CLK

6dB AMP

6dB AMP

SW25

DL

DELAY

CLPH

SW24

CLPH

N

P

C SQUELCH

SYNC SEP

B.D.

BPF

CLEAR SYNC

SQUELCH

CLAMP FEED BACK VIDEO ALC

PULSE GEN

PB/REC DISCRI

REC AFC

REC APC

PB APC

COLOR KILLER ID DET

APC SW

ACC DET

MAIN CONV2

MAIN CONV1

SW22

SW23

SW21

1/2 2FL VCC

DOWN CONV

1/2 PHASE SW

4 PHASE GEN

PICT 2

OSD VIDEO IN

FSC IN

ART V/HIN

OSD V OUT

V OUT

TO/FROM SYSTEM & SERVO CONTROL SECTION

FROM SYSTEM & SERVO CONTROL SECTION

TO AUDIO SECTION

R (26um)

L' (49um)

R' (49um)

L (26um)

P5001 6

P5001 5

P5001 4

P5001 3

P5001 2

P5001 1

SW32

SW33

SW34

SW35

SW36

SW37

SW38

SW39

SP2

SP2

SP1

SP1

EP2

EP2

EP1

EP1

CH2

SW30

SP

CH1

SW29

EP

VCA

CH2

SW31

CH1

SW28

2M LPF

P

SW20

ACC

HPF FHTRAP

SEP

COMP

SW19

HPF

L SECAM

L SECAM

SW27

LPF

MIX LEVEL ADJ

C.K

B.E

P

TRAP

SW18

R

REC AGC DEL PB ALC

P

629 TRAP

SW7

R

FM AGC

P EQ

SQPB

S DL

SW8

SQPB

G EQ

DL IM

DEMO

SUB LPF

MAIN DE EMPH

N.L. EMPH

N.L. DE EMPH

R

D.E

N.C

Y APA.

P

SW17

R

FBC/ALC

1MHPF

7MHPF

LAG LEAD LPF

FM MOD

IO/DEV ADJ

MAIN EMPH CARRIER OFFSET W.C/DC

SW9

P

R

SW10

Y LPF

R

P

SW11

VIDEOAGC

CH1

SW16

CH3

CH2

ATT (-10dB)

ATT (-10dB)

ATT (-10dB)

CCD

C CCD

CLOCK DEIVER

Y CCD

YNR

SW14

REC DO/

DO

CLAMP

CLAMP

LPF

A MUTE

KILLER

I2C CLK

I2C DATA

MUTE

KIL

SERIAL CONT INTERFACE

TO/FROM SYSTEM & SERVO CONTROL SECTION

K7614

TU V OUT

VIDEO IN

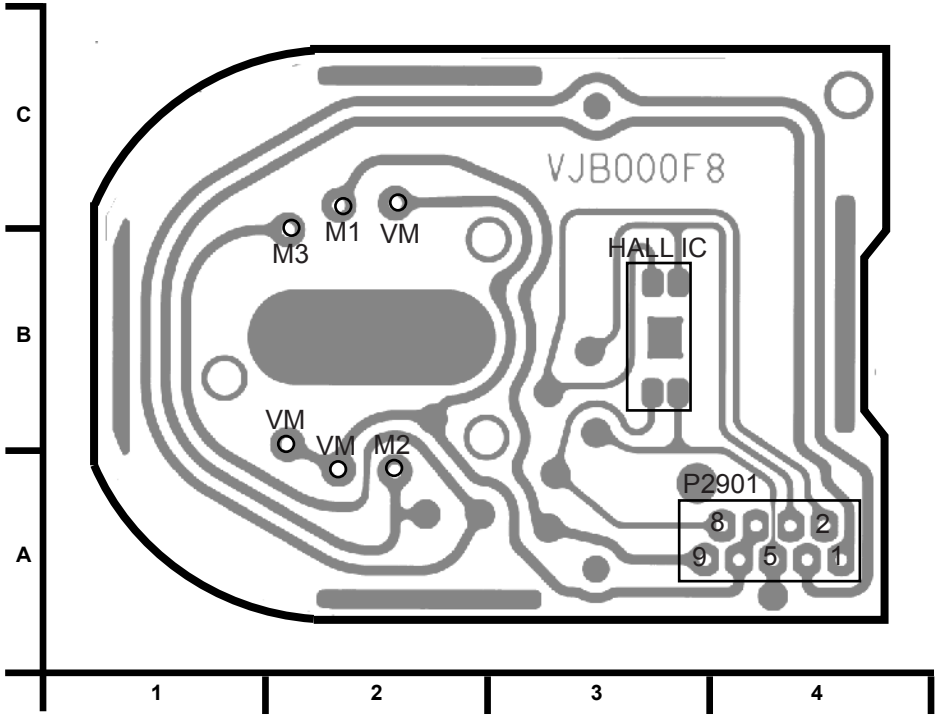
FRONT VIDEO IN

FROM AUDIO SECTION

PICT 1

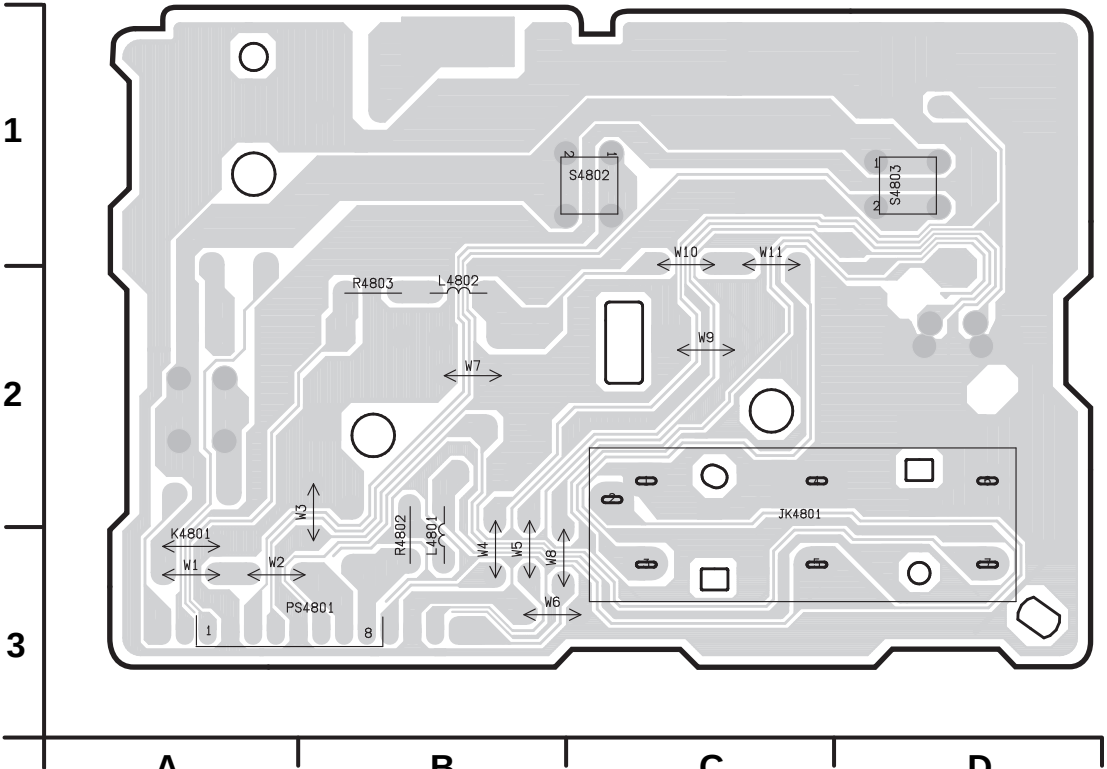
AVR

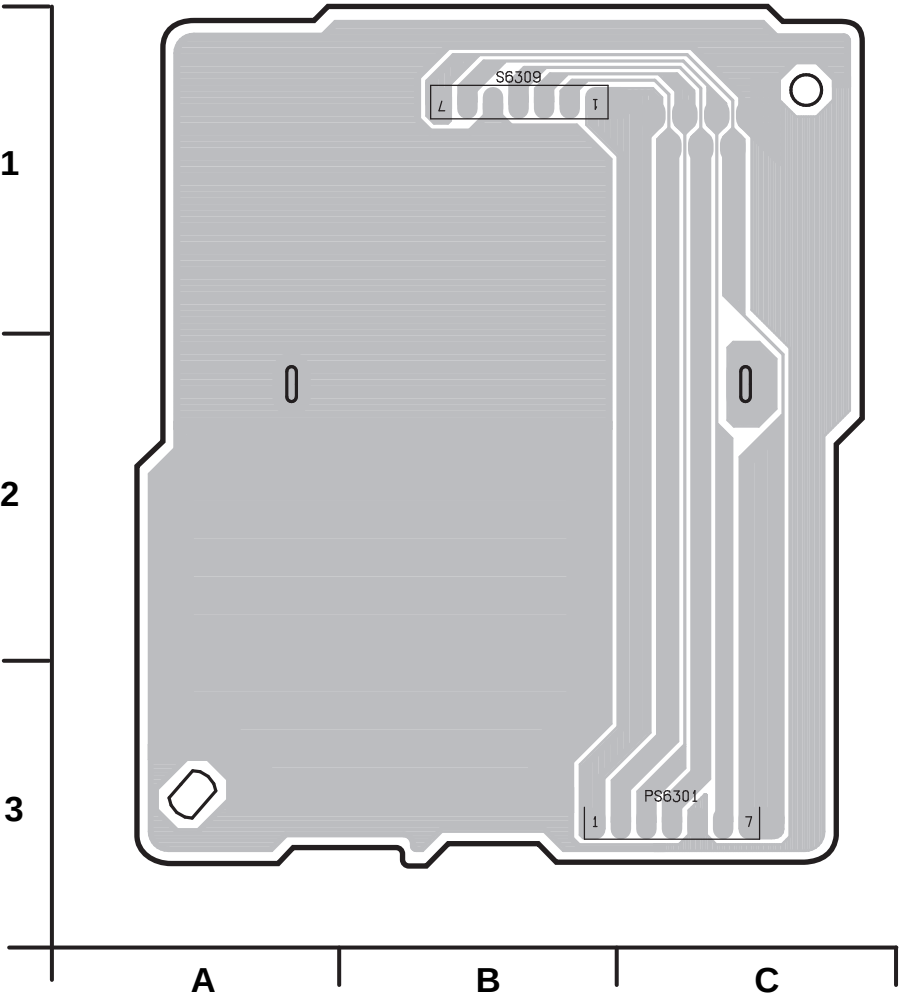
FROM SYSTEM & SERVO CONTROL SECTION



CYLINDER MOTOR UNIT	
Integrated Circuit	
HALL IC	B-3
Connector	
P2901	A-4

ADDRESS INFORMATION


1
2
3
A
B
C
D
S4802
S4803
R4803
L4802
W10
W11
W9
W7
W3
K4801
W1
W2
PS4801
R4802
L4801
W4
W5
W8
W6
JK4801


S6309
7
1
PS6301
1
7
1
2
3
A
B
C